

PLAN FOR THE REZONING
OF
NEW YORK CITY

BUSINESS AND INDUSTRIAL REQUIREMENTS

Technical Report No. 3
to
City Planning Commission

HARRISON, BALLARD & ALLEN

June, 1949

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BUSINESS AND INDUSTRIAL REQUIREMENTS

TECHNICAL REPORT No. 3 of:

PLAN FOR THE REZONING OF NEW YORK CITY

City Planning Commission Contract with Harrison, Ballard & Allen,
Consultants, for Studies to Provide the Basis for a General Revision
of New York City Zoning Resolution.

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INTRODUCTION

On the basis of available information it is possible at present to approximate land and floor space utilization for the essential economic activities of the City and to make a reasonable estimate of requirements in 1970. The degree of precision possible in estimating these requirements is sufficient for the purpose of zoning. Although further refinement might be possible if additional data on some factors were available, the same general quantities and proportions would probably remain.

The basic sources used in making these estimates were:

- 1) Employment in 1948 and estimates for employment in 1970 from Technical Report No. 2, Framework for Rezoning : Economic Base;
- 2) Preliminary figures from the Survey of Land Use, New York City, 1948, conducted for the Plan for Rezoning;
- 3) Floor space per worker in manufacturing estimated from data provided by a survey of floor space in use made by the Consolidated Edison Company in 1944.

Tabulations of these data are included below as in the Appendix on "Floor Space Utilization Per Employee in Manufacturing Plants in New York City". Estimates for commercial space are based on sample studies conducted by the staff of the Plan for Rezoning.

I

MANUFACTURING AND INDUSTRIAL LAND AND FLOOR SPACE UTILIZATION

A. 1948 Land Use and Employment

The amount of land in manufacturing and industrial use has been measured in the 1948 Land Use Survey under Category 9 -- Warehouse, Loft and Light Manufacturing, and Category 11 -- Industry. The borough figures used in this report are preliminary, but will in all probability approximate the final tabulations.

Employment data by borough for 1948 are not available from any original source. City-wide figures as developed in Technical Report No. 2 are based on data from the State Department of Labor, Division of Placement and Unemployment Insurance. Estimated employment by borough for 1948 can therefore only

be based upon the distribution in the 1939 Census of Manufactures. At that time the percentages were:

Distribution of Manufacturing Employment, 1939^{a/}

Manhattan	58.6%
Bronx	3.6%
Brooklyn	26.4%
Queens	10.2%
Richmond	1.2%
New York City TOTAL	100.0%

Application of the above percentages to total City employment in 1948 produces the breakdown in Table 1. The acres of manufacturing and industrial land per 1000 employees are then computed by dividing the number of acres of land by the thousands of persons employed in these categories in each borough.

TABLE 1 1948 LAND USE --- MANUFACTURING AND INDUSTRY

	Land (acres)	Employment ^{b/}	Acres per 1000 Employees
Manhattan	935	627,000	1.49
Bronx	514	38,500	13.35
Brooklyn	2,370	282,500	8.39
Queens	1,650	109,000	15.14
Richmond	1,192	13,000	91.69
N. Y. C.	6,661	1,070,000	6.23

B. 1970 Land Use and Employment

Estimated borough employment for 1970 is derived on a somewhat similar basis as for 1948. Total manufacturing and industrial employment for the City is taken from the estimates in Technical Report No. 2. In breaking this down by borough, some estimate of the future distribution of manufacturing employment is necessary. As there is no adequate data on borough distribution, the U. S. Census of Manufactures yielded the following data on the distribution of manufacturing employment in the City for 1919, 1929, and 1939:

^{a/} U. S. Census of Manufactures, 1939. Wage earners only; no data available for salaried personnel and proprietors.

^{b/} Employment covered by the New York State Unemployment Insurance Law.

Borough Manufacturing Wage Earners as a
Per Cent of Total City - 1919, 1929, 1939 c/

	1919	1929	1939
Manhattan	60.6%	58.4%	58.6%
Bronx	3.1	4.4	3.6
Brooklyn	26.1	26.0	26.4
Queens	7.4	9.8	10.2
Richmond	<u>2.8</u>	<u>1.4</u>	<u>1.2</u>
New York City			
TOTAL	100.0%	100.0%	100.0%

c/ U. S. Census of Manufactures — 1919, 1929, 1939.

Manhattan seems to have been dropping one percentile of the total each decade. It is assumed that this decrease will accelerate during the next 20 years because of (1) the increasing average age and consequent deterioration of business structures in Manhattan, and (2) the increasing desire of industry for more spacious sites in less congested locations. Due to congestion in Manhattan it is probable that new firms will have a greater tendency to locate in the outer boroughs. It is assumed, therefore, for purposes of this calculation that the Manhattan proportion will not be over 50 per cent of all manufacturing wage earners in the City by 1970. Because of past relative stability only a slight increase to 28 per cent is assumed for Brooklyn; for the other boroughs, the Bronx is assumed to increase to 6 per cent, Queens to 14 per cent, and Richmond to 2 per cent of the total. The numerical change in employment reflected in these figures would be as follows:

	Change from 1948 Employment	Per Cent
Manhattan	-31,000	-4.9
Queens	+58,000	+53.2
Brooklyn	+47,500	+16.7
Bronx	+32,800	+85.2
Richmond	<u>+12,700</u>	<u>+97.7</u>
New York City	+120,000	+11.2

These numerical increases in borough employment result from the assumptions of (1) a slight decrease in Manhattan and (2) an overall increase for the City as forecast in Technical Report No. 2. Although the distribution of the increase among the boroughs may be affected by future unforeseen developments, assumptions must be made for zoning purposes, namely to allow for anticipated reasonable increases in the use of land for industry and manufacturing, and permit reasonable flexibility in the selection of locations.

The anticipated acreage per 1,000 employees in manufacturing and industrial use for 1970 in each borough is derived by increasing this ratio 10 per cent over 1948 for all boroughs with the exception of Richmond. This is sufficient to allow a margin for the trend in the direction of lower industrial buildings with more open space.

Estimates of land acreage requirements for manufacturing and industry in 1970 are then made for each borough by multiplying employment by the estimated acreage per 1,000 employees. The City-wide acreage per 1,000 employees will undergo more than a 10 per cent increase in this process because of the greater proportion of employment in the outer boroughs where the land:employment ratio is higher.

TABLE 2. 1970 ESTIMATED LAND REQUIREMENTS

	Employment	Acres per 1000 Employees	Acres Required
Manhattan	596,000	1.64	977
Bronx	71,300	14.68	1,047
Brooklyn	330,000	9.23	3,046
Queens	167,000	16.65	2,781
Richmond	25,700	91.69	2,356
New York City	1,190,000	8.58	10,207

The anticipated increase in manufacturing and industrial acreage from 1948 to 1970 represents a greater percentage increase than that expected in employment for each borough. This follows from the assumption that the increase in employment will occur in the boroughs outside Manhattan which have a greater acreage per 1,000 workers. The result of this assumption is an anticipated 53 per cent increase in manufacturing and industrial land for the entire City by 1970. By borough this increase would break down as follows:

	<u>Increase Over 1948</u>	
	Acreage	Per Cent
Manhattan	42	4.5
Bronx	533	103.7
Brooklyn	676	28.5
Queens	1,131	67.7
Richmond	1,164	97.7
New York City	3,546	53.2

C. 1948 Floor Space — Manufacturing and Industry

Because of the extent of loft type structures in New York City it is necessary to determine the approximate amount of floor space used for manufacturing and industry at present and the anticipated requirement for 1970. Land use presents only one dimension of the City's problem, and must be

supplemented with an estimate of floor space or bulk requirements, and then related to land area.

Data on floor space per manufacturing employee has been developed from the survey of 15,000 such firms made in 1944 by Consolidated Edison. These data, appended to this report, are a representative sample of the floor space utilization practices of all types of manufacturing firms in the City. The borough averages represent a composite figure based on the proportional amount of each type of industry in each borough, with the exception of Richmond for which data is not available.

In Table 3 the floor space per employee factors are applied to estimated 1948 industrial and manufacturing employment. This results in a net floor space figure for each borough which is in all cases increased by a 25 per cent allowance for hallways, elevators, entrances, etc. to give a gross figure and then converted to acreage for comparative purposes. The four-borough total amounts to 9,598 acres or 15 square miles of gross floor space in industrial structures.

TABLE 3. TOTAL FLOOR SPACE, 1948

	Average Floor Space Per Employ.*	Employment	Gross Floor Space (net + 25%)
Manhattan	251	627,000	4,516 Acres
Bronx	396	38,500	438
Brooklyn	422	282,500	3,421
Queens	391	109,000	1,223
Richmond	Floor Space Data Not Available		

* See below Appendix on "Floor Space Utilization per Employee in Manufacturing Plants in New York City".

D. 1948 Relation of Gross Floor Space to Land

This factor is arrived at by dividing the present estimated gross floor space by the land area from the Land Use Survey. The resulting figure is useful only for comparative purposes. It indicates the building height in stories which would accommodate all industrial floor space on all industrial land in use. However, 100 per cent coverage seldom exists in the City. While the intensity of development varies widely among different areas, the floor space : land relationship gives a measure of the average bulk requirements for industry which is most useful as a point of reference in appraising present and future zoning maps.

TABLE 4. RELATION OF GROSS FLOOR SPACE TO LAND, 1948

	Gross Floor Space	Land	Relation Gross Floor Space to Land
Manhattan	4,516 Acres	935 Acres	4.83
Bronx	438	514	.85
Brooklyn	3,421	2,370	1.44
Queens	1,223	1,650	.74
Richmond	Data Not Available		

E. Total Floor Space, 1970

In computing 1970 floor space requirements allowance has been made for a 5 per cent increase in the floor area per manufacturing employee. The increase in output per worker is largely responsible for this allowance, even though there are such counter forces as smaller machine sizes and higher building costs which could tend to decrease industrial bulk. Newer plants built in less congested areas have definitely increased floor space per worker in most cases. This figure is also affected by a shift in the types of manufacturing predominant in each borough because of the great differences between industries in this respect. For example, the floor space per employee figure for the clothing industry is 148 square feet, as against 304 square feet for the printing industry.

In view of these conflicting factors it is felt that a flat 5 per cent allowance will provide a safe margin in estimating requirements for the future. The application of these increased floor space per worker figures to the estimated 1970 borough employment gives the net square feet of floor space per borough which is then converted to gross by adding 25 per cent for common areas, etc., and stated in acres.

TABLE 5. 1970 FLOOR SPACE REQUIREMENTS

Estimated Requirements	Aver. Floor Space per Empl. (1948 + 5%)	Employment	Gross Floor Space (net + 25%)
Manhattan	264	596,000	4,515 Acres
Bronx	416	71,300	851
Brooklyn	443	330,000	4,195
Queens	411	167,000	1,970
Richmond	Data Not Available		

F. Relation of Gross Floor Space to Land, 1970

This computation followed the same method used for the 1948 factor. The 1970 ratio is slightly lower than 1948 as a result of the increase in floor space

per worker of 5 per cent as against a uniform 10 per cent increase in land area per 1,000 workers for each borough.

TABLE 6. RELATION OF GROSS FLOOR SPACE TO LAND, 1970

	Gross Floor Space	divided by	Land	= Relation of Gross Flr. Space to Land
Manhattan	4,515		977	4.62
Bronx	851		1,047	.81
Brooklyn	4,195		3,046	1.38
Queens	1,970		2,781	.71
Richmond	Data Not Available			

II

COMMERCIAL LAND AND FLOOR SPACE UTILIZATION

Because non-manufacturing commercial enterprises cover so many different types of land use distributed throughout the City it is more difficult to ascertain present land use and project the future than in the case of manufacturing and industrial land. There is also much less data available. The land uses comprising this field were measured in Category #8 — Office and Store Buildings — in the 1948 Land Use Survey.* No mixed residential and business properties or automotive storage and service uses are included in this category. With these exceptions, all non-manufacturing commercial activities fall within the scope of Category #8.

Data on commercial employment is not readily available and must be estimated from the employment categories in Technical Report No. 2. Present and

* "Includes fireproof and semi-fireproof office buildings, banks; one or more story stores and department stores; telephone and telegraph offices and buildings; restaurants, roadhouses; theaters, places of public assembly (concert halls, lodge rooms, etc.)"

future employment estimates from the categories selected follow:

Commercial Employment Estimates		
Category	1948	1970
Wholesale Trade	335,000	360,000
Finance and Insurance	185,000	200,000
Retail Trade <u>a/</u>	185,000	200,000
Hotels	45,000	55,000
Radio, Television & Adv.	50,000	75,000
Real Estate	120,000	130,000
Professional Services	300,000	350,000
Business Services	280,000	300,000
Other <u>b/</u>	400,000	450,000
Total	1,900,000	2,120,000

a/ Excludes 60 per cent of retail employment assumed to be in local stores.

b/ Includes allowances for portions of Transportation, City, State and Federal workers, and Construction, Personal Services and Utilities.

A. Non-Manufacturing Land Use and Floor Space, 1948.

Total land use in Category 8 is divided by total City employment to produce the figure of acreage per 1,000 employees. Floor space is produced by multiplying total employment times 200 square feet per employee. This figure of 200 feet is based on surveys of some of the City's commercial buildings and is generally accepted as a reasonable standard.

The resulting figure is increased 25 per cent to be in terms of gross floor space and is converted to acreage. The estimated floor space acreage is then divided by the estimated land acreage to produce floor space to land factor. No borough data is included with the exception of the land use breakdown which is presented as measured in the Land Use Survey. Data is not available which would produce borough breakdowns of floor space per employee.

TABLE 7. COMMERCIAL LAND USE AND FLOOR SPACE, 1948

(A) Land Use

	Land Use (Acres)	Employees	Land per 1000 Empl.
New York City	1,928	1,900,000	1.01
Manhattan	557	Data Not Available	
Bronx	344	Data Not Available	
Brooklyn	415	Data Not Available	
Queens	523	Data Not Available	
Richmond	89	Data Not Available	

(B) Floor Space to Land Relationship

	Employees	Sq.Ft. of Floor Space per worker	Total Gross Floor Space (Acres)*	Total Land	Ratio Gr. Fl. Sp. to Land
New York City	1,900,000	200	8,942	1,928	4.64

* Net plus 25 per cent for common spaces.

TABLE 8. NON-MANUFACTURING LAND USE AND FLOOR SPACE
 ESTIMATES, 1970

(A) Land Use

	Employees	Land per 1000 Employees	Total Land (Acres)
New York City	2,120,000	1.01	2,160
Manhattan	Data Not Available		625
Bronx	Data Not Available		385
Brooklyn	Data Not Available		465
Queens	Data Not Available		585
Richmond	Data Not Available		100

(B) Floor Space to Land Relationship.

	Employees	Sq.Ft. of Flr. Space per worker	Total Gross Floor Space (Acres)*	Total Land	Ratio Gro. Fl. Sp. to Land
New York City	2,120,000	200	9,977	2,160	4.64

* Net plus 25 per cent for common spaces.

B. Commercial Land Use and Floor Space, 1970

These figures are derived in the same manner as those for 1948, with changes only in employment and land use figures. The former are from the 1970 estimates found in Technical Report No. 2, and the latter are from a per cent increase based on the estimated growth in employment from III 1948 to 1970.

AUTOMOTIVE AND TRANSPORTATION LAND USE, 1948 AND 1970

For the purposes of this study Automotive Storage and Service (Land Use Category 10) is grouped with Transportation (Category 13) instead of with the other non-manufacturing commercial uses.* This is necessary because of the large amount of land in Automotive uses in the 1948 Land Use Survey and the lack of information on employment in the automotive field. Automotive uses occupied 1,446 acres in the City in 1948 as against 1,928 acres in the other non-manufacturing commercial uses. This is due largely to the extent of larger-size properties in automotive use, even though the number of such properties may be fewer than in the other commercial uses. Gasoline filling stations, garages,

* AUTOMOTIVE STORAGE AND SERVICE includes gas stations of one or more stories, semi-fireproof or fireproof, with or without lubrication plant or showroom. Garages over five-car capacity as a subsidiary use to be shown with special indication.

TRANSPORTATION includes railroad stations and yards, bus terminals, sub-way storage yards, trackage right of way; piers and docks.

and auto sales rooms generally occupy large sites even in the more congested sections of the City.

New York City lags behind other cities in terms of automobiles per 1,000 population. However, the rate of auto ownership has been increasing during the past few decades. Traffic relief programs can be expected to increase the amount of land devoted to parking and garaging. Therefore, further increases in the amount of land in automotive uses by 1970 can be expected. A 30 per cent allowance over the present amount should come within reasonable range of the growth which may occur along these lines. Automotive land use in the boroughs for 1948 and as estimated for 1970 follows:

TABLE 9. AUTOMOTIVE STORAGE AND SERVICE, 1948 AND 1970.

	ACRES OF LAND	
	1948	1970
Manhattan	262	341
Bronx	278	361
Brooklyn	512	666
Queens	348	452
Richmond	46	60
New York City	1,446	1,880

The amount of land in transportation, which includes airports, railroad and subway rights of way and yards, as well as piers and docks, is not expected to increase by 1970. This is due largely to the recent construction of such large airport facilities as LaGuardia and New York International, and the unlikelihood of new rail facilities being developed in the City. In the light of this, the land use in transportation as shown in Table 10 can be used both for 1948 and 1970.

TABLE 10. TRANSPORTATION - ACRES OF LAND USE, 1948 AND 1970.

	ACRES OF LAND
Manhattan	338
Bronx	662
Brooklyn	767
Queens	6,562
Richmond	555
New York City	8,884

IV

SUMMARY

A summary of all land used for manufacturing and industry, commerce, automotive storage and services, and transportation in 1948 and the amounts of land expected to be found in these uses in 1970 is shown in Table 11.

TABLE 11.

(A) LAND USED FOR INDUSTRY, COMMERCE, AUTOMOTIVE STORAGE AND SERVICE AND TRANSPORTATION, 1948.

	New York City	Manhattan	Bronx	Brooklyn	Queens	Richmond
Manufacturing & Industry	6,661	935	514	2,370	1,650	1,192
Commerce	1,928	557	344	415	523	89
Automotive Storage & Services	1,446	262	278	512	348	46
Transportation	8,884	338	662	767	6,562 *	555
Total	18,919	2,092	1,798	4,064	9,083	1,882

(B) LAND REQUIRED FOR INDUSTRY, COMMERCE, AUTOMOTIVE STORAGE AND SERVICE AND TRANSPORTATION, 1970.

	New York City	Manhattan	Bronx	Brooklyn	Queens	Richmond
Manufacturing & Industry	10,207	977	1,047	3,046	2,781	2,356
Commerce	2,160	625	385	465	585	100
Automotive Storage & Services	1,880	341	361	666	452	60
Transportation	8,884	338	662	767	6,562 *	555
Total	23,131	2,281	2,455	4,944	10,380	3,071

* Includes 5,360 Acres in LaGuardia and International Airports.

DISTRIBUTION OF MANUFACTURING PLANTS IN NEW YORK CITY

DESCRIPTION OF METHOD

The Economic Research Department of the Consolidated Edison Company of New York spent two years studying manufacturing locational development in New York City. The results were incorporated into a series of maps for the City's eight major industry groups.

The study shows locational shifts only, and should not be used for analysis of employment trends, size and number of firms, etc.

The 1900 and 1922 maps were adapted from the "Regional Survey of New York and its Environs" 1928. The 1946 map was drafted on the basis of information from the 1946 Industrial Directory which was produced by the New York State Department of Commerce. There were differences in the type of material obtained from the two sources and many adjustments were necessary to make the information comparable. The major adjustments were:

- (1) The information contained in both sources gave the location of manufacturing plants by address. Since some of the industries in 1946 had become heavily concentrated in small areas it would have been impossible to map each plant by address and produce a readable map. Therefore, all the information was mapped by census tract locations as defined by the U. S. Bureau of the Census rather than by exact street locations.
- (2) The breakdown of number of employees per firm for 1946 differed from that used by The Regional Plan for 1900 and 1922. Since the earlier maps could not be corrected to fit the present classifications, it was necessary to match the 1946 breakdown to the earlier ones. However, it was impossible to avoid the discrepancies which are illustrated:

Number of Employees per Firms

	<u>1900- and 1922</u>	<u>1946</u>
Women's Clothing	1-29, 30-49, 50-99, 100 +	4-24, 25-49, 50-99, 100 +
Men's Clothing	1-19, 20-49, 50-99, 100 +	4-24, 25-49, 50-99, 100 +
Textiles	20-99, 100 +	25-49, 50-99, 100 +
Printing	30-99, 100 +	" " "
Food	20-99, 100 +	" " "
Chemicals	" "	" " "
Metals	" "	" " "
Woods	" "	" " "

- (3) The plants were mapped within the census tracts as close to their actual address as possible with the exception of the map for Women's and Children's Clothing. In this industry the larger plants were plotted in the center of the concentrated area, regardless of actual location. The purpose was to show the proportion of large plants to smaller plants within the area as well as the relative density of one area versus another.

- (4) Statistics on the number of firms plotted for 1946 are available but this information does not exist for the earlier maps. The following tables show the firms plotted by borough, by industry and by breakdown of number of employees per firm.

Table 12 covers all firms mapped in the selected eight industry groups. Table 13 is a summary of all but 1,311 firms which were listed in the Industrial Directory for 1946. It includes manufacturing firms of every type in New York City. General observation indicates that the location of the firms not plotted would follow the same pattern as those plotted.

Note:

- (1) Only actual plants were mapped, main offices were not included unless they adjoined factories.
- (2) There is no available information for any plant with less than four employees for 1946 and it is impossible to estimate the number or per cent of these.

NUMBER OF MANUFACTURING ESTABLISHMENTS IN NEW YORK CITY

TABLE 12. Eight Main Industry Groups by Borough and Size of Establishment
1946

Metal Products and Machinery

Number of Establishments by Employee Groups

<u>Borough</u>	<u>Total</u>	<u>4-9</u>	<u>10-24</u>	<u>25-49</u>	<u>50-99</u>	<u>100-499</u>	<u>500-999</u>	<u>1000 & Over</u>
Manhattan	2,960	1,287	949	394	189	119	8	14
Bronx	265	86	78	47	28	20	4	2
Brooklyn	1,020	323	293	165	114	96	16	13
Queens	549	134	154	89	72	75	12	13
Richmond	36	10	9	5	3	6	-	3
TOTAL	4,830	1,840	1,483	700	406	316	40	45

Chemicals and Allied Products

Manhattan	475	187	138	65	42	42	1	-
Bronx	36	11	15	7	1	2	-	-
Brooklyn	261	95	72	49	19	23	2	1
Queens	118	34	36	23	14	10	1	-
Richmond	13	2	4	1	1	3	2	-
TOTAL	903	329	265	145	77	80	6	1

Wood Products and Furniture

Manhattan	846	371	310	98	50	16	1	-
Bronx	105	48	36	14	4	3	-	-
Brooklyn	419	170	135	55	33	21	4	1
Queens	147	50	44	24	14	14	-	1
Richmond	5	2	2	-	1	-	-	-
TOTAL	1,522	641	527	191	102	54	5	2

Printing and Publishing

Manhattan	2,093	867	622	310	163	111	10	10
Bronx	23	16	1	2	1	2	-	1
Brooklyn	127	65	24	16	10	9	3	-
Queens	46	21	9	2	5	9	-	-
Richmond	7	5	-	1	1	-	-	-
TOTAL	2,296	974	656	331	180	131	13	11

NUMBER OF MANUFACTURING ESTABLISHMENTS IN NEW YORK CITY

TABLE 12. Eight Main Industry Groups by Borough and Size of Establishment
(Cont.) 1946

Food and Beverages								
Number of Establishments by Employee Groups								
Borough	Total	4-9	10-24	25-49	50-99	100-499	500-999	1000 & Over
Manhattan	445	158	132	60	49	36	7	3
Bronx	138	44	52	22	9	10	-	1
Brooklyn	435	131	142	55	55	43	7	2
Queens	143	29	45	21	16	25	3	4
Richmond	13	4	6	1	-	2	-	-
TOTAL	1,174	366	377	159	129	116	17	10
Textile Mill Products								
Manhattan	875	332	330	137	59	15	2	-
Bronx	46	11	23	5	6	1	-	-
Brooklyn	326	86	126	73	29	10	1	1
Queens	160	32	80	25	13	10	-	-
Richmond	3	-	1	-	1	1	-	-
TOTAL	1,410	461	560	240	108	37	3	1
Men's and Boy's Clothing								
Manhattan	793	280	209	135	106	61	2	-
Bronx	8	5	-	1	-	2	-	-
Brooklyn	237	22	60	52	52	48	2	1
Queens	17	1	2	2	6	4	2	-
Richmond	6	2	-	4	-	-	-	-
TOTAL	1,061	310	271	194	164	115	6	1
Women's and Children's Clothing								
Manhattan	4,906	894	1,631	1,563	650	166	2	-
Bronx	215	39	78	76	14	8	-	-
Brooklyn	1,099	193	459	315	102	30	-	-
Queens	142	16	55	47	22	2	-	-
Richmond	23	1	13	8	1	-	-	-
TOTAL	6,385	1,143	2,236	2,009	789	206	2	-
Summary - Eight Industry Groups								
Manhattan	13,393	4,376	4,321	2,762	1,308	566	33	27
Bronx	836	260	283	174	63	48	4	4
Brooklyn	3,924	1,085	1,311	780	414	280	35	19
Queens	1,322	317	425	233	162	149	18	18
Richmond	106	26	35	20	8	12	2	3
TOTAL	19,581	6,064	6,375	3,969	1,955	1,055	92	71

Source: Industrial Directory of New York State, 1946, New York State Dep't. of Commerce.

TABLE 13. NUMBER OF MANUFACTURING ESTABLISHMENTS IN NEW YORK CITY

Summary of Industries Covered in Maps for Zoning Report
by Borough and Size of Employment *
1946

<u>Borough</u>	<u>Total</u>	<u>Number of Establishments by Size</u>						<u>1000 & Over</u>
		<u>4-9</u>	<u>10-24</u>	<u>25-49</u>	<u>50-99</u>	<u>100-499</u>	<u>500-999</u>	
Summary-- Total Survey								
(8 Main Groups, Leather, Glass, Paper, Misc. Apparel and Other Miscellaneous Ind.)								
Manhattan	19,059	6,704	6,248	3,612	1,735	697	36	27
Bronx	993	317	333	196	76	63	4	4
Brooklyn	4,649	1,303	1,558	885	496	353	35	19
Queens	1,492	364	464	265	186	172	22	19
Richmond	122	31	39	23	10	14	2	3
Total	26,315	8,719	8,642	4,981	2,503	1,299	99	72
Not Surveyed	<u>1,311</u>							
Total	27,626							

*Note (a) The following industries are covered in the Industrial Directory.

Total Number Covered -- 26,315

Metal Products and Machinery	Leather Products
Chemicals and Allied Products	Glass, Stone and Clay Products
Wood Products and Furniture	Paper Products
Printing and Publishing	Selected Miscellaneous Apparel and
Food and Beverages	Finished Fabric Products
Textile Mill Products	Selected Miscellaneous Industries
Men's and Boys' Clothing	
Women's and Children's Clothing	

(b) The following industries are not covered in the Industrial Directory.

Total Number Not Covered -- 1,311

Rubber Products	Miscellaneous Finished Textile Products
Tobacco Products	Miscellaneous Men's and Boys' Underwear,
	Nightwear and Wearing Accessories

Source: Industrial Directory of New York State, 1946, New York State Department
of Commerce.

MAPS

WOMEN'S AND CHILDREN'S CLOTHING
FOR THE YEARS 1900, 1922 AND 1946

(Pages 17 - 19, following)

MAPS

MEN'S AND BOYS' CLOTHING
FOR THE YEARS 1900, 1922 AND 1946

(Pages 20 - 22, following)



DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

**MEN'S & BOYS' CLOTHING
1900**

INDUSTRIES INCLUDED

SUITS, COATS, OVERCOATS & TROUSERS
LEATHER & SHEEPLINED CLOTHING
RAINCOATS
WORK CLOTHING
SPORTSWEAR

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
○ 1 - 19 EMPLOYEES
● 20 - 49 " "
○ 50 - 99 " "
● 100 OR MORE " "

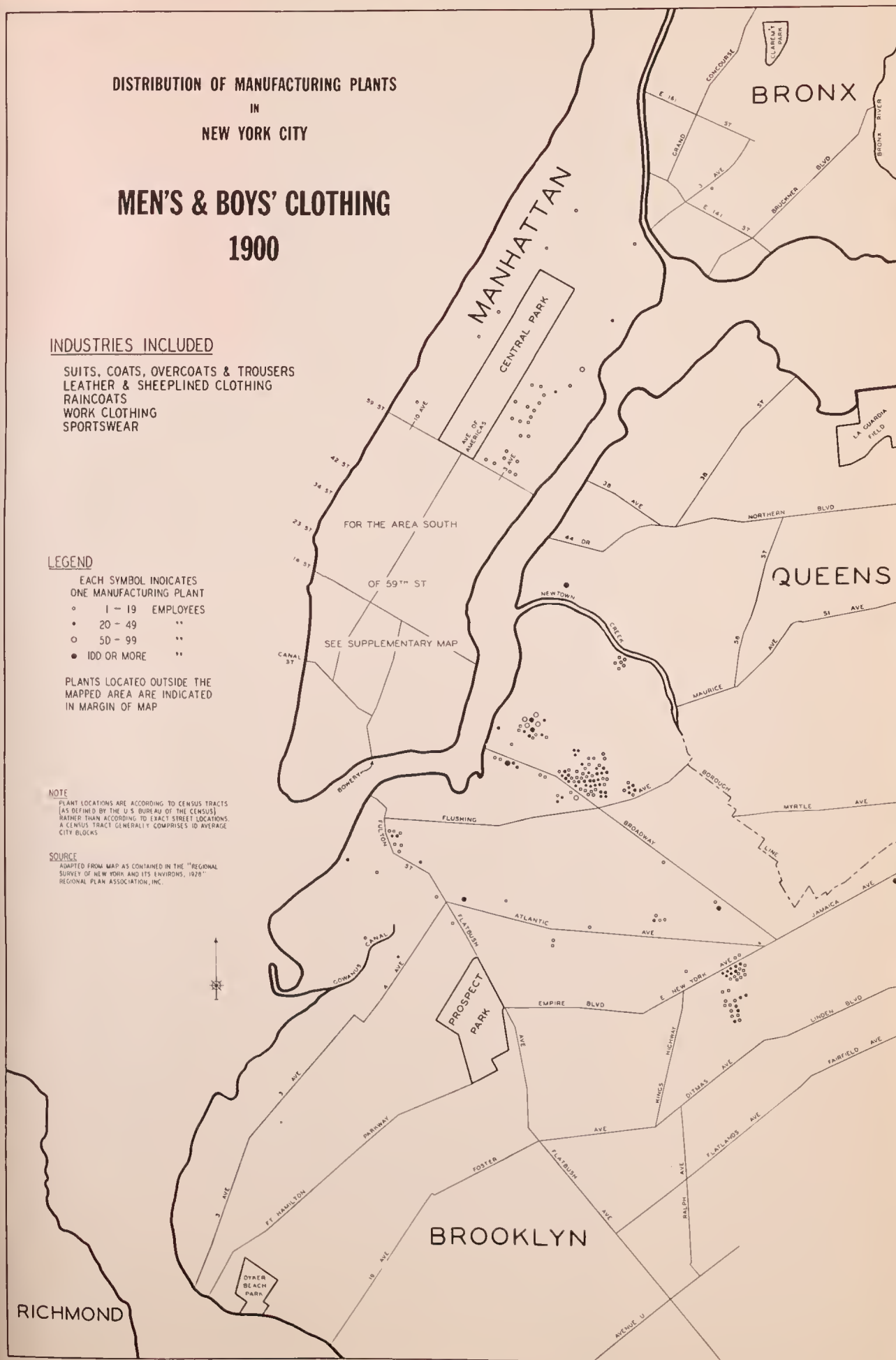
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RAATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.



SUPPLEMENTARY MAP



MEN'S & BOYS' CLOTHING - 1900

LOWER MANHATTAN
SOUTH OF 59TH ST.

NOTE

PLANT LOCATIONS WERE DETERMINED BY THE U. S. BUREAU OF THE CENSUS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RAATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS

THE LARGER PLANTS (WITH 20 EMPLOYEES AND OVER)
WERE PLOTTED IN THE CENTER OF A CONCENTRATED AREA
FOR THE PURPOSE OF SHOWING THE PROPORTION OF LARGE
PLANTS TO SMALLER PLANTS WITHIN THAT AREA AS WELL
AS THE RELATIVE DENSITY OF ONE AREA VERSUS ANOTHER



DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

MEN'S & BOYS' CLOTHING
1922

INDUSTRIES INCLUDED

SUITS, COATS, OVERCOATS & TROUSERS
LEATHER & SHEEPLINED CLOTHING
RAINCOATS
WORK CLOTHING
SPORTSWEAR

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT

- 1 - 19 EMPLOYEES
- 20 - 49 "
- 50 - 99 "
- 100 OR MORE "

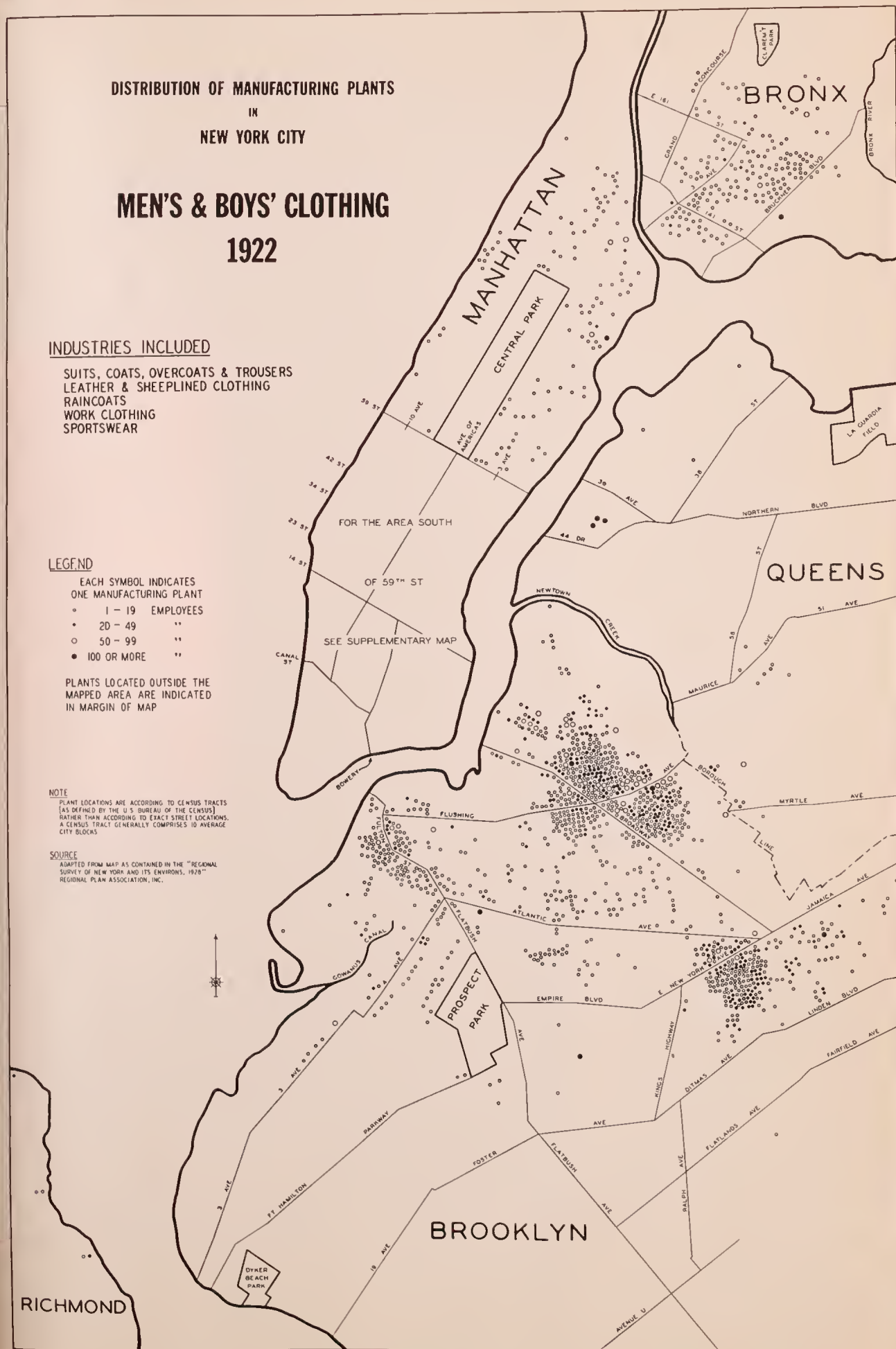
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.



SUPPLEMENTARY MAP



MEN'S & BOYS' CLOTHING - 1922

LOWER MANHATTAN
SOUTH OF 59th ST.

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS

THE LARGER PLANTS (WITH 20 EMPLOYEES AND OVER)
WERE PLOTTED IN THE CENTER OF A CONCENTRATED AREA
FOR THE PURPOSE OF SHOWING THE PROPORTION OF LARGE
PLANTS TO SMALLER PLANTS WITHIN THAT AREA AS WELL
AS THE RELATIVE DENSITY OF ONE AREA VERSUS ANOTHER

DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

MEN'S & BOYS' CLOTHING
1946

INDUSTRIES INCLUDED

SUITS, COATS, OVERCOATS & TROUSERS
LEATHER & SHEEPLINED CLOTHING
RAINCOATS
WORK CLOTHING
SPORTSWEAR

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 4 - 24 EMPLOYEES
• 25 - 49 "
• 50 - 99 "
• 100 OR MORE "

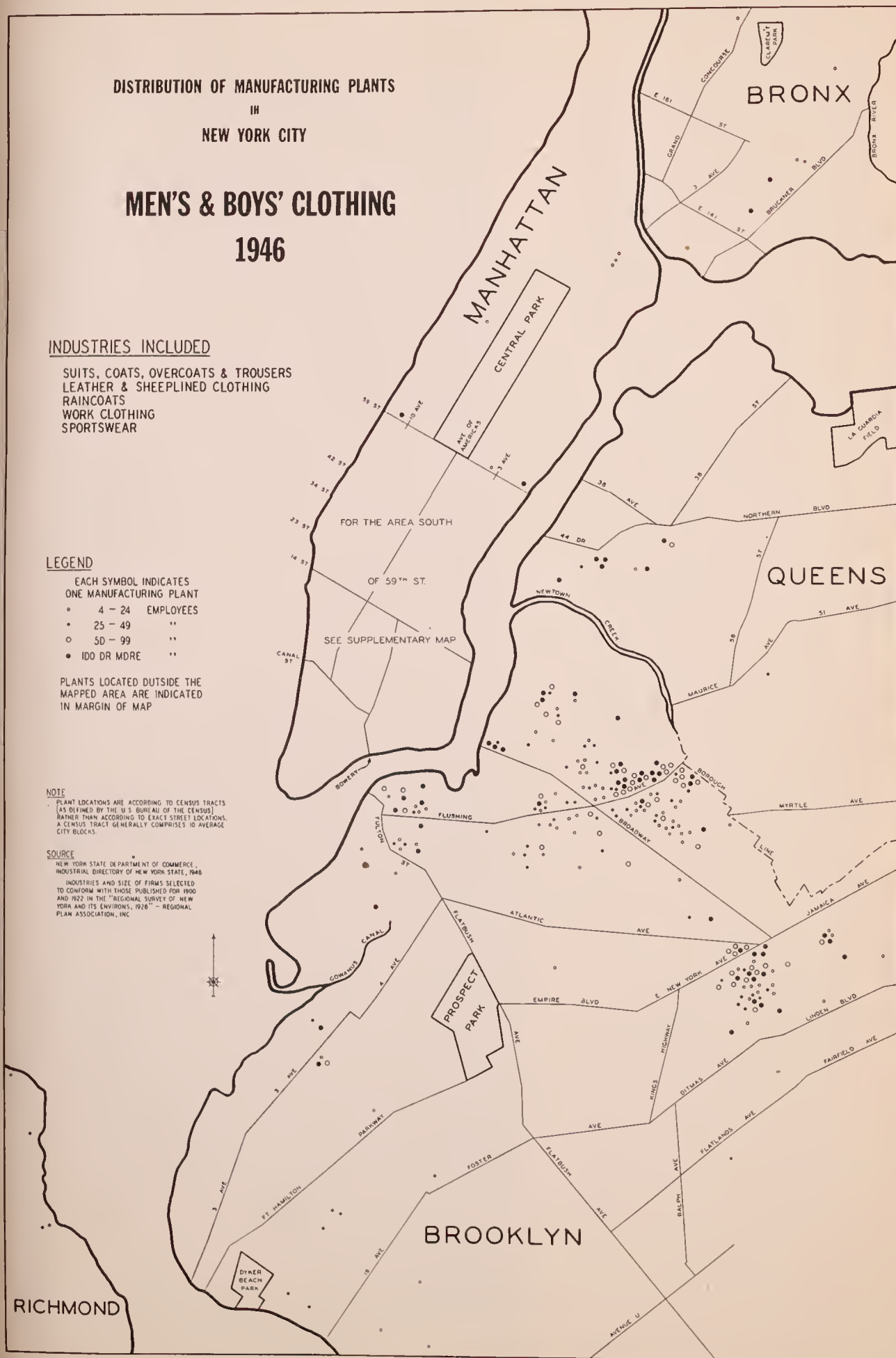
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

NEW YORK STATE DEPARTMENT OF COMMERCE,
INDUSTRIAL DIRECTORY OF NEW YORK STATE, 1946
INDUSTRIES AND SIZE OF FIRMS SELECTED
TO CONFORM WITH THOSE PUBLISHED FOR 1900
AND 1922 IN THE "REGIONAL SURVEY OF NEW
YORK AND ITS ENVIRONS, 1926" - REGIONAL
PLAN ASSOCIATION, INC.



SUPPLEMENTARY MAP



MEN'S & BOYS' CLOTHING - 1946

LOWER MANHATTAN
SOUTH OF 59th ST.

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

THE LARGER PLANTS (WITH 25 EMPLOYEES AND OVER)
WERE PLOTTED IN THE CENTER OF A CONCENTRATED AREA
FOR THE PURPOSE OF SHOWING THE PROPORTION OF LARGE
PLANTS TO SMALLER PLANTS WITHIN THAT AREA AS WELL
AS THE RELATIVE DENSITY OF ONE AREA VERSUS ANOTHER



MAPS

TEXTILE MILL PRODUCTS
FOR THE YEARS 1900, 1922 AND 1946

(Pages 23 - 25, following)

DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

TEXTILE MILL PRODUCTS
1900

INDUSTRIES INCLUDED

KNIT GOODS
COTTON, SILK & RAYON GOODS
WOOLEN & WORSTED GOODS
DYEING & FINISHING TEXTILES

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 20 - 99 EMPLOYEES
● 100 OR MORE

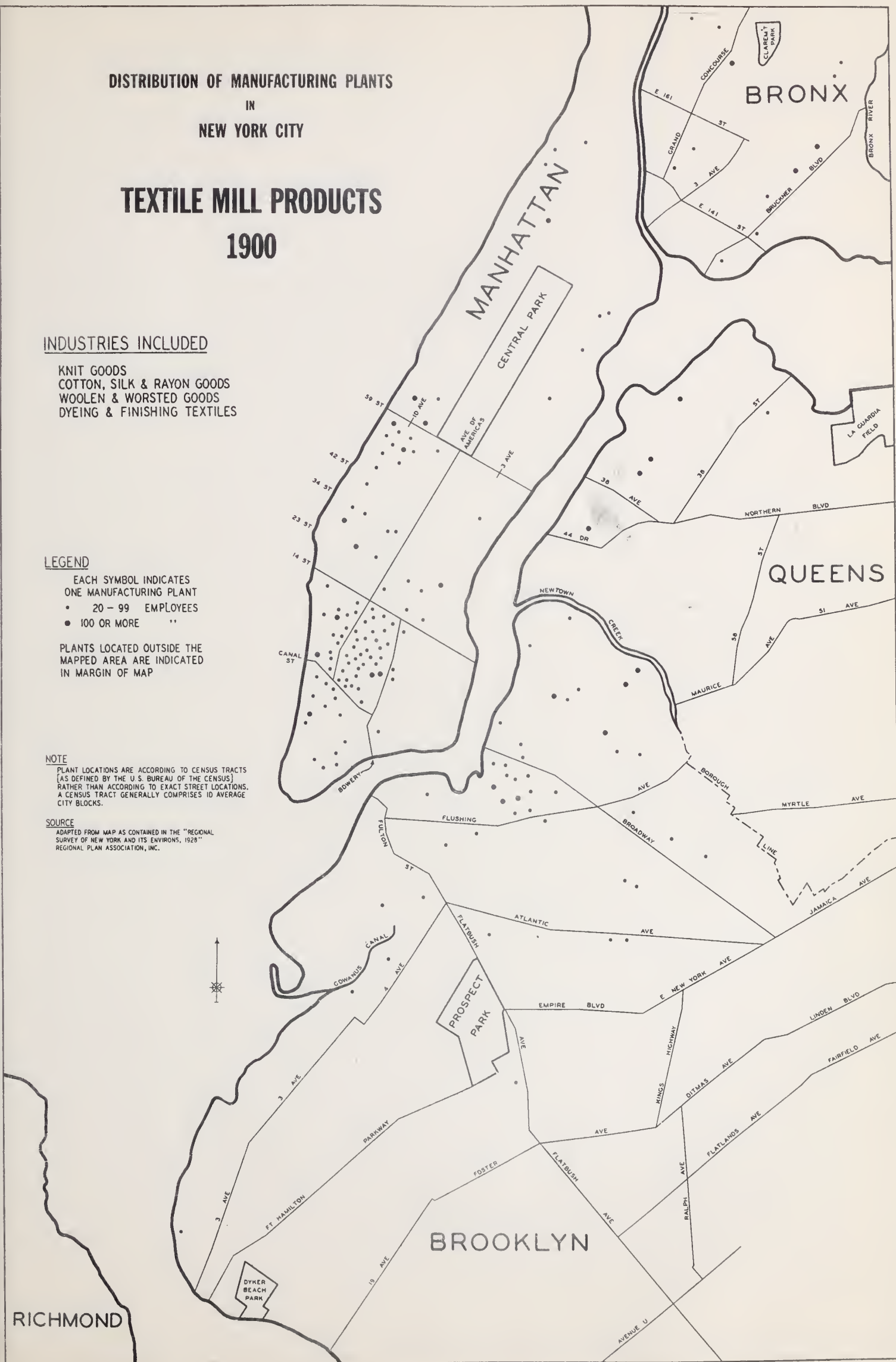
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
[AS DEFINED BY THE U.S. BUREAU OF THE CENSUS]
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.





DISTRIBUTION OF MANUFACTURING PLANTS IN NEW YORK CITY

TEXTILE MILL PRODUCTS 1922

INDUSTRIES INCLUDED

KNIT GOODS
COTTON, SILK & RAYON GOODS
WOOLEN & WORSTED GOODS
DYEING & FINISHING TEXTILES

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 20 - 99 EMPLOYEES
● 100 OR MORE "

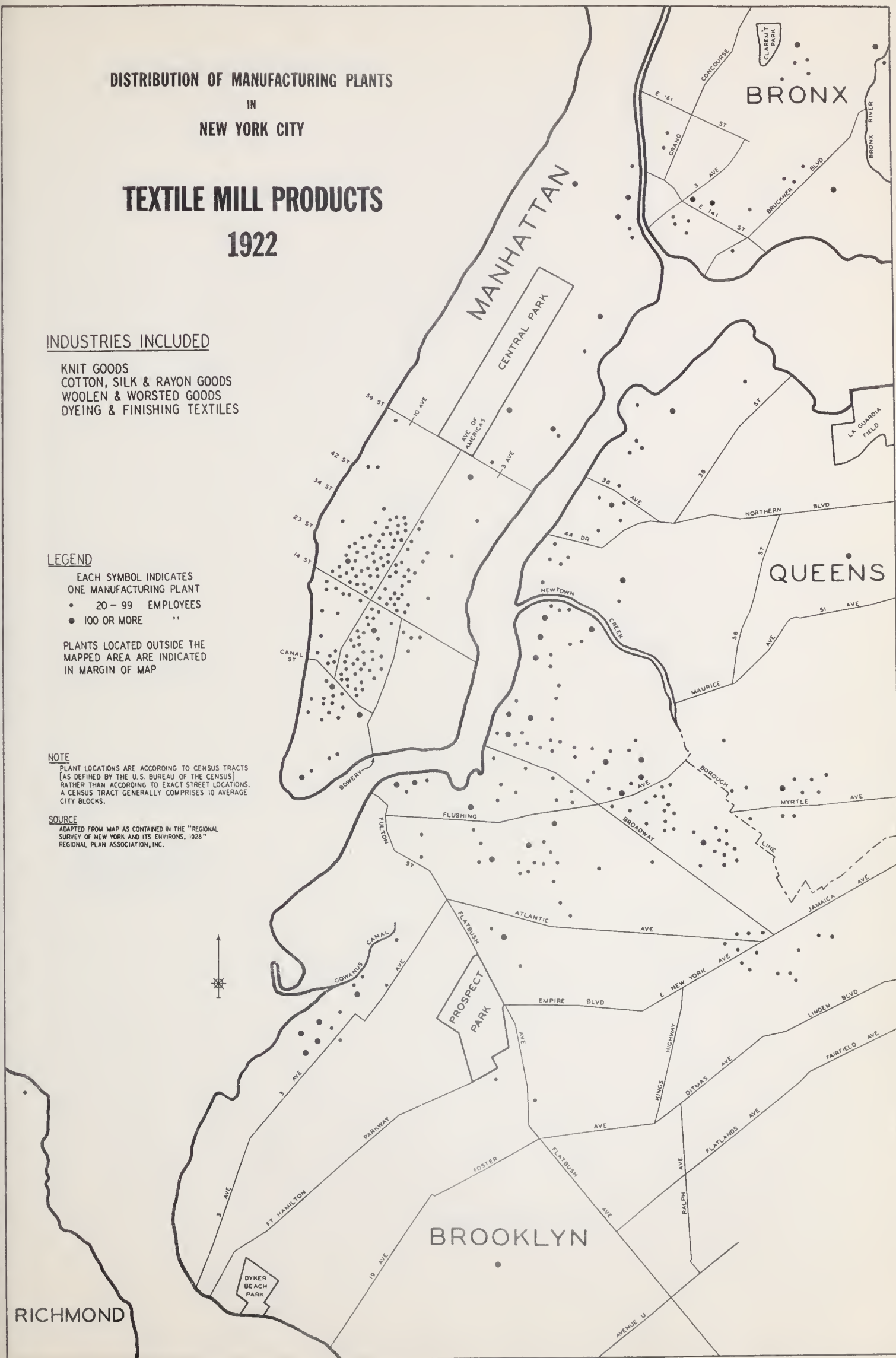
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U.S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.





DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

TEXTILE MILL PRODUCTS
1946

INDUSTRIES INCLUDED

KNIT GOODS
COTTON, SILK & RAYON GOODS
WOOLEN & WORSTED GOODS
DYEING & FINISHING TEXTILES

LEGEND

- EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
- 25 - 49 EMPLOYEES
 - 50 - 99 "
 - 100 OR MORE "

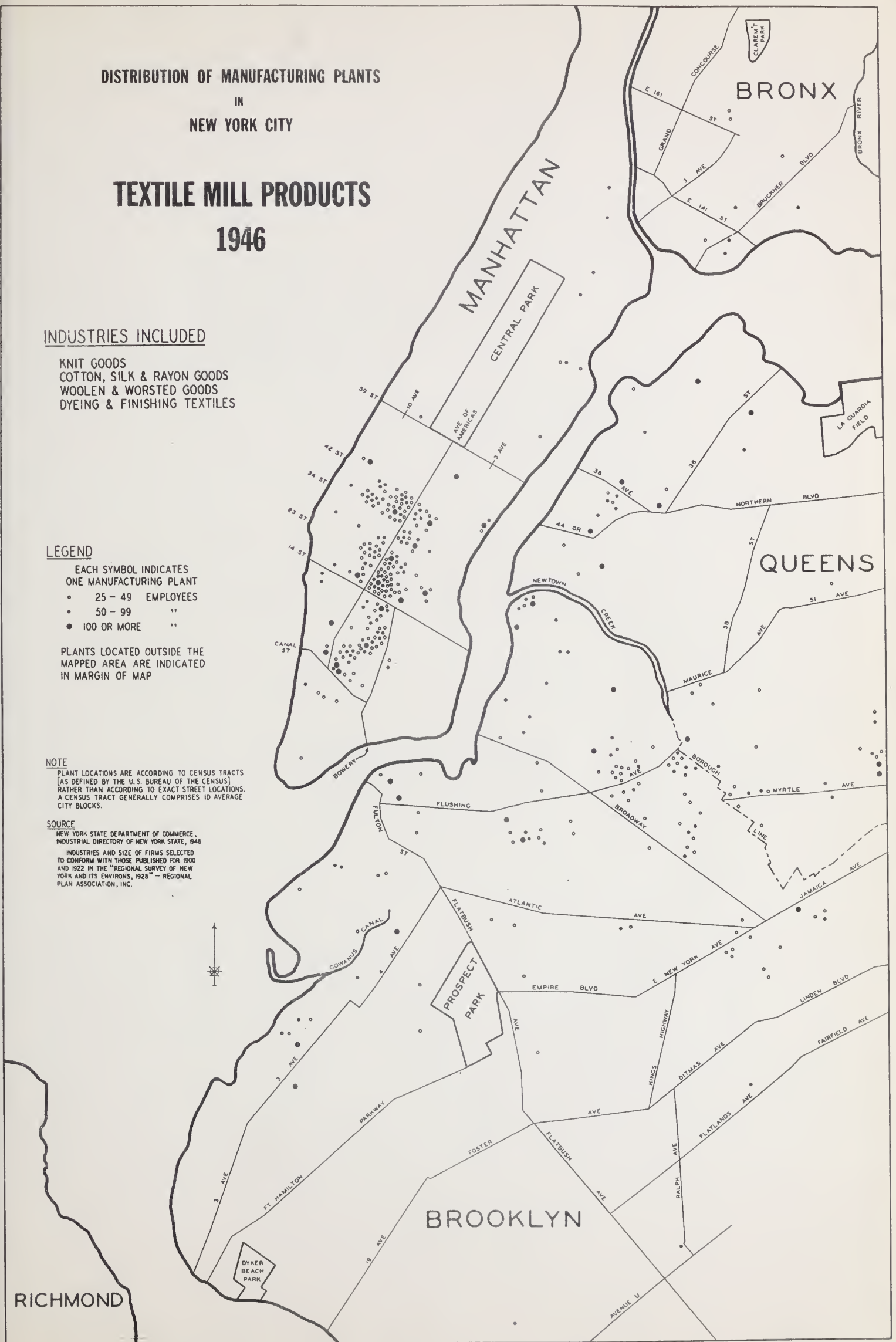
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

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RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

NEW YORK STATE DEPARTMENT OF COMMERCE,
INDUSTRIAL DIRECTORY OF NEW YORK STATE, 1946
INDUSTRIES AND SIZE OF FIRMS SELECTED
TO CONFORM WITH THOSE PUBLISHED FOR 1900
AND 1922 IN THE "REGIONAL SURVEY OF NEW
YORK AND ITS ENVIRONS, 1928" - REGIONAL
PLAN ASSOCIATION, INC.





MAPS

PRINTING AND PUBLISHING
FOR THE YEARS 1900, 1922 AND 1946

(Pages 26 - 28, following)



DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

PRINTING & PUBLISHING
1900

INDUSTRIES INCLUDED

NEWSPAPERS, PERIODICALS & BOOKS
COMMERCIAL PRINTING
LITHOGRAPHING, PHOTOENGRAVING, STEREOTYPING
BOOKBINDING & BLANK-BOOK MAKING

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 30 - 99 EMPLOYEES
• 100 OR MORE "

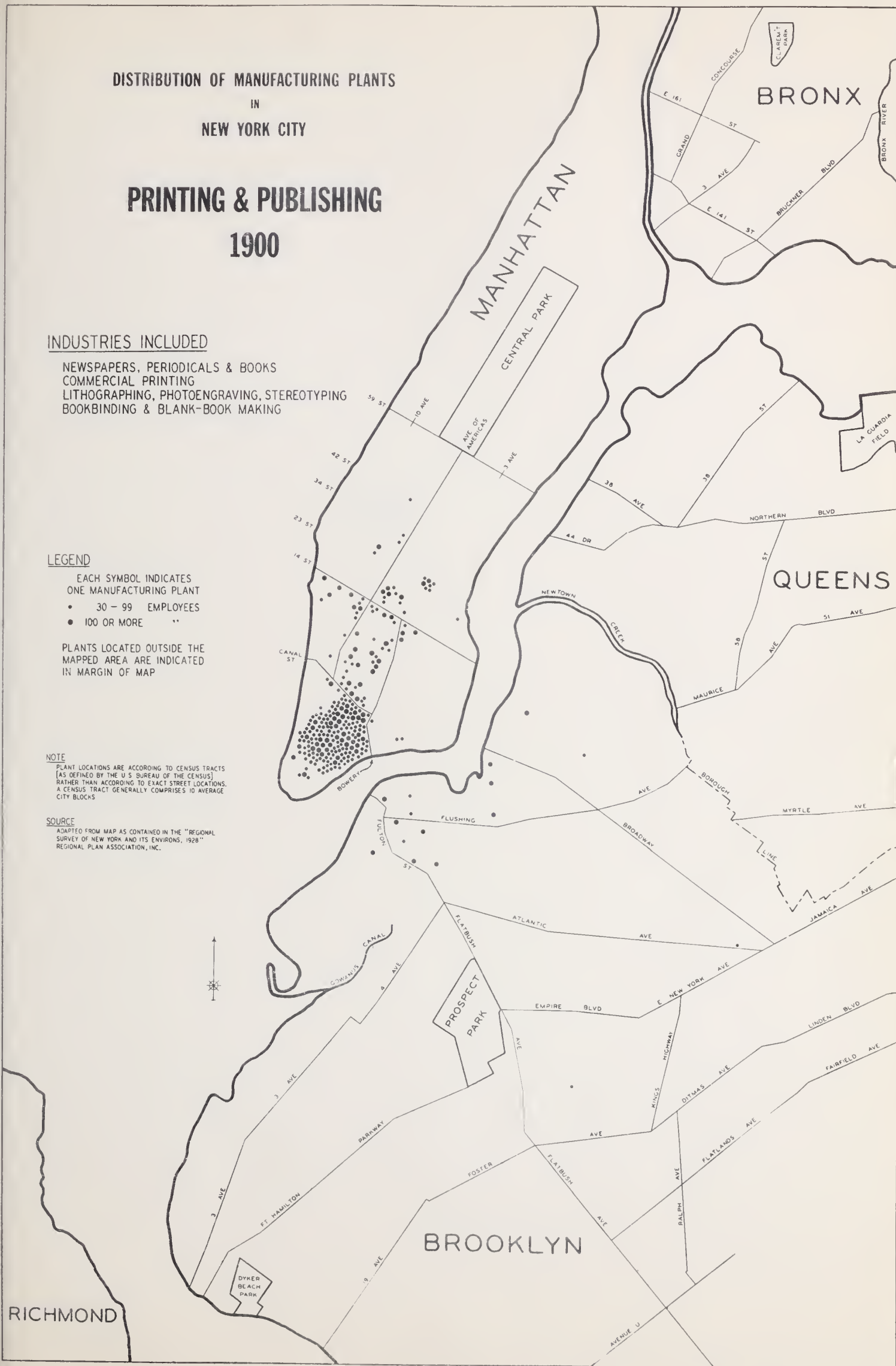
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U S BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.



DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

PRINTING & PUBLISHING
1922

INDUSTRIES INCLUDED

NEWSPAPERS, PERIODICALS & BOOKS
COMMERCIAL PRINTING
LITHOGRAPHING, PHOTOENGRAVING, STEREOTYPING
BOOKBINDING & BLANK-BOOK MAKING

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 30 - 99 EMPLOYEES
• 100 OR MORE "

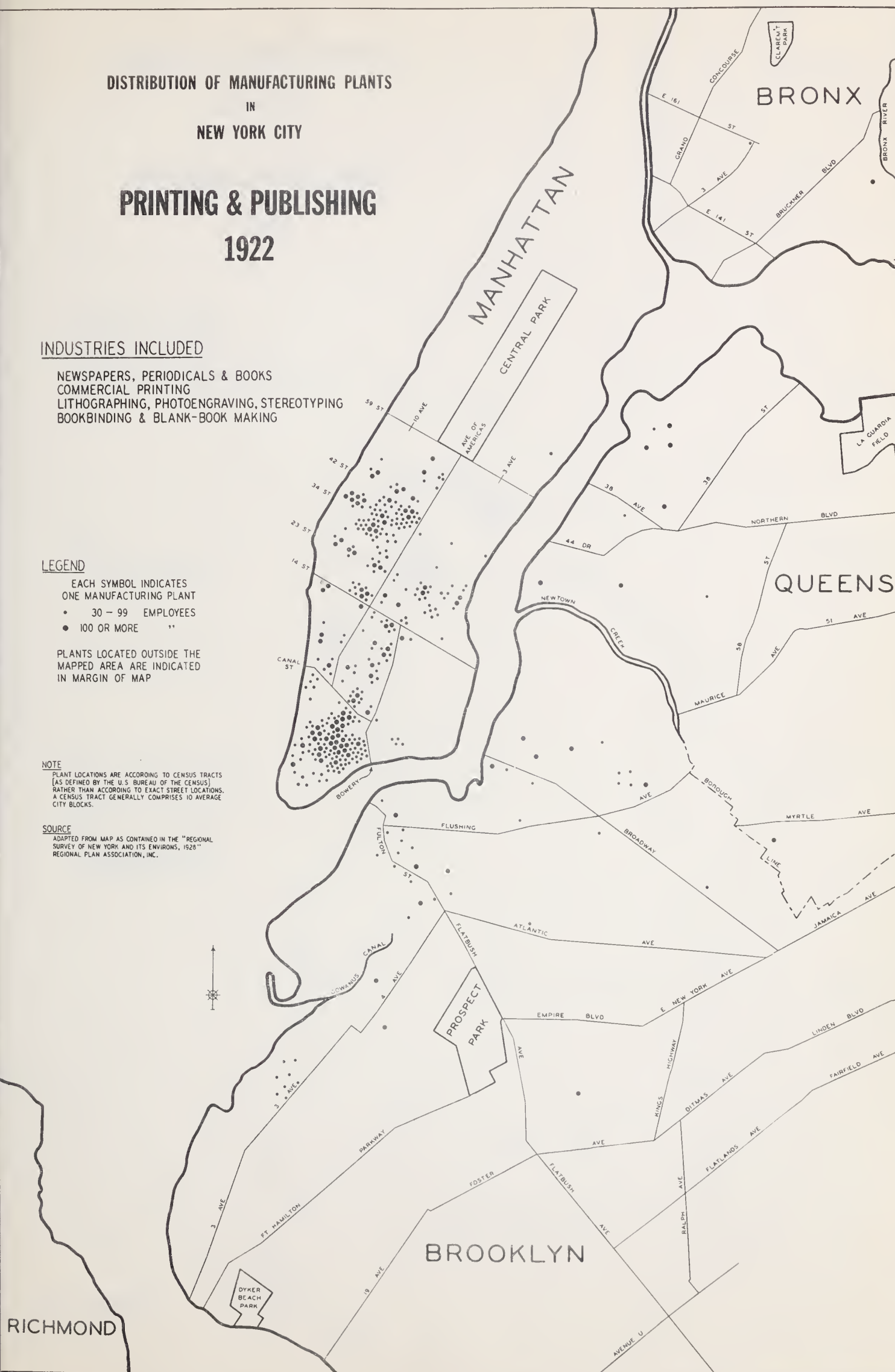
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
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RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.



DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

PRINTING & PUBLISHING
1946

INDUSTRIES INCLUDED

NEWSPAPERS, PERIODICALS & BOOKS
COMMERCIAL PRINTING
LITHOGRAPHING, PHOTOENGRAVING, STEREOTYPING
BOOKBINDING & BLANK-BOOK MAKING

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 25 - 49 EMPLOYEES
• 50 - 99 " "
• 100 OR MORE " "

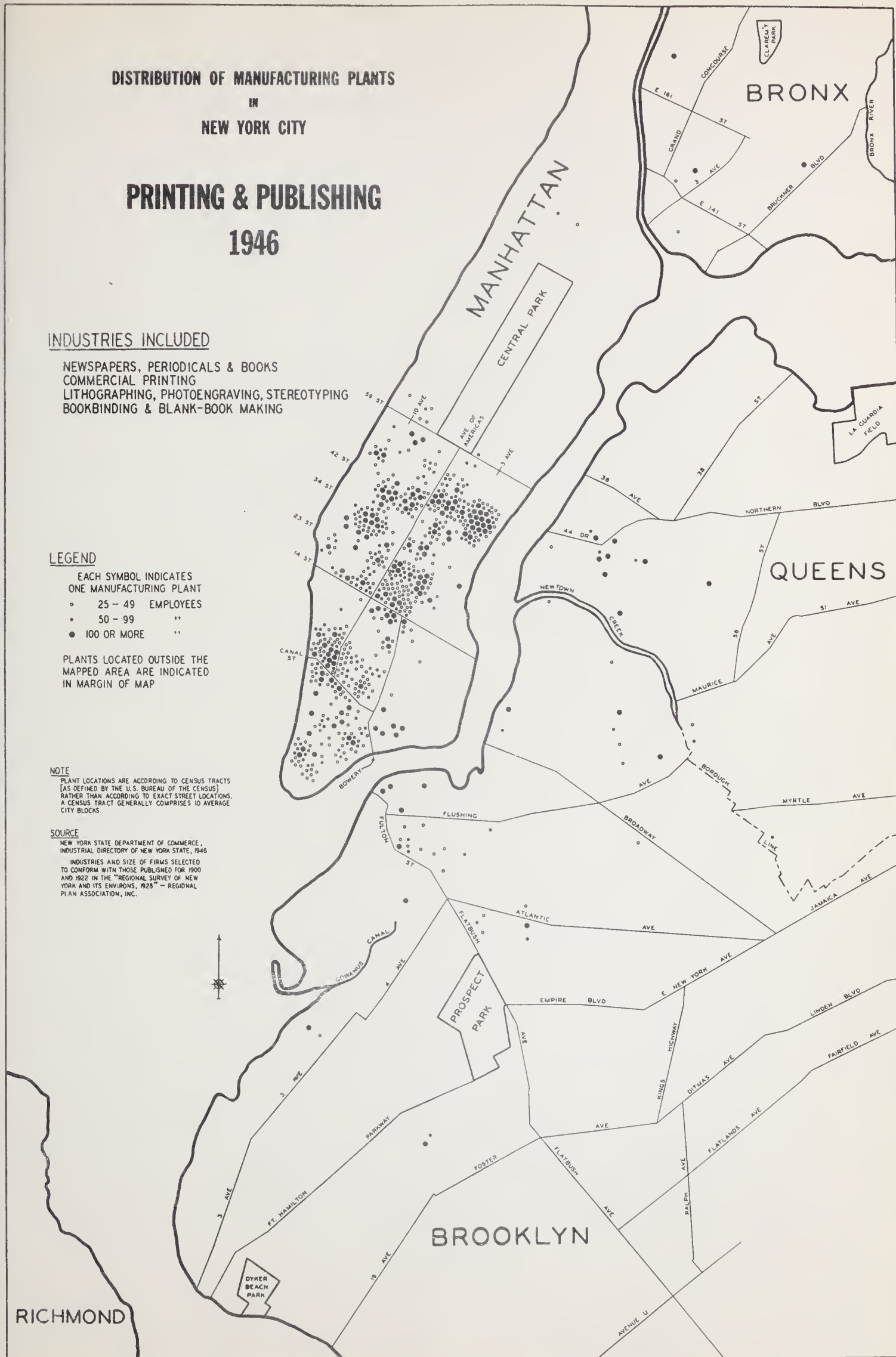
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

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[AS DEFINED BY THE U.S. BUREAU OF THE CENSUS]
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

NEW YORK STATE DEPARTMENT OF COMMERCE,
INDUSTRIAL DIRECTORY OF NEW YORK STATE, 1946
INDUSTRIES AND SIZE OF FIRMS SELECTED
TO CONFORM WITH THOSE PUBLISHED FOR 1900
AND 1922 IN THE "REGIONAL SURVEY OF NEW
YORK AND ITS ENVIRONS, 1928" - REGIONAL
PLAN ASSOCIATION, INC.





MAPS

FOOD AND BEVERAGES

FOR THE YEARS 1900, 1922 AND 1946

(Pages 29 - 31, following)

DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

FOOD & BEVERAGES
1900

INDUSTRIES INCLUDED

MEAT & DAIRY PRODUCTS
BAKERY PRODUCTS
CONFECTIONERY
CANNED & PRESERVED FOODS
MISCELLANEOUS FOOD PREPARATIONS
BEVERAGES

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 20 - 99 EMPLOYEES
• 100 OR MORE "

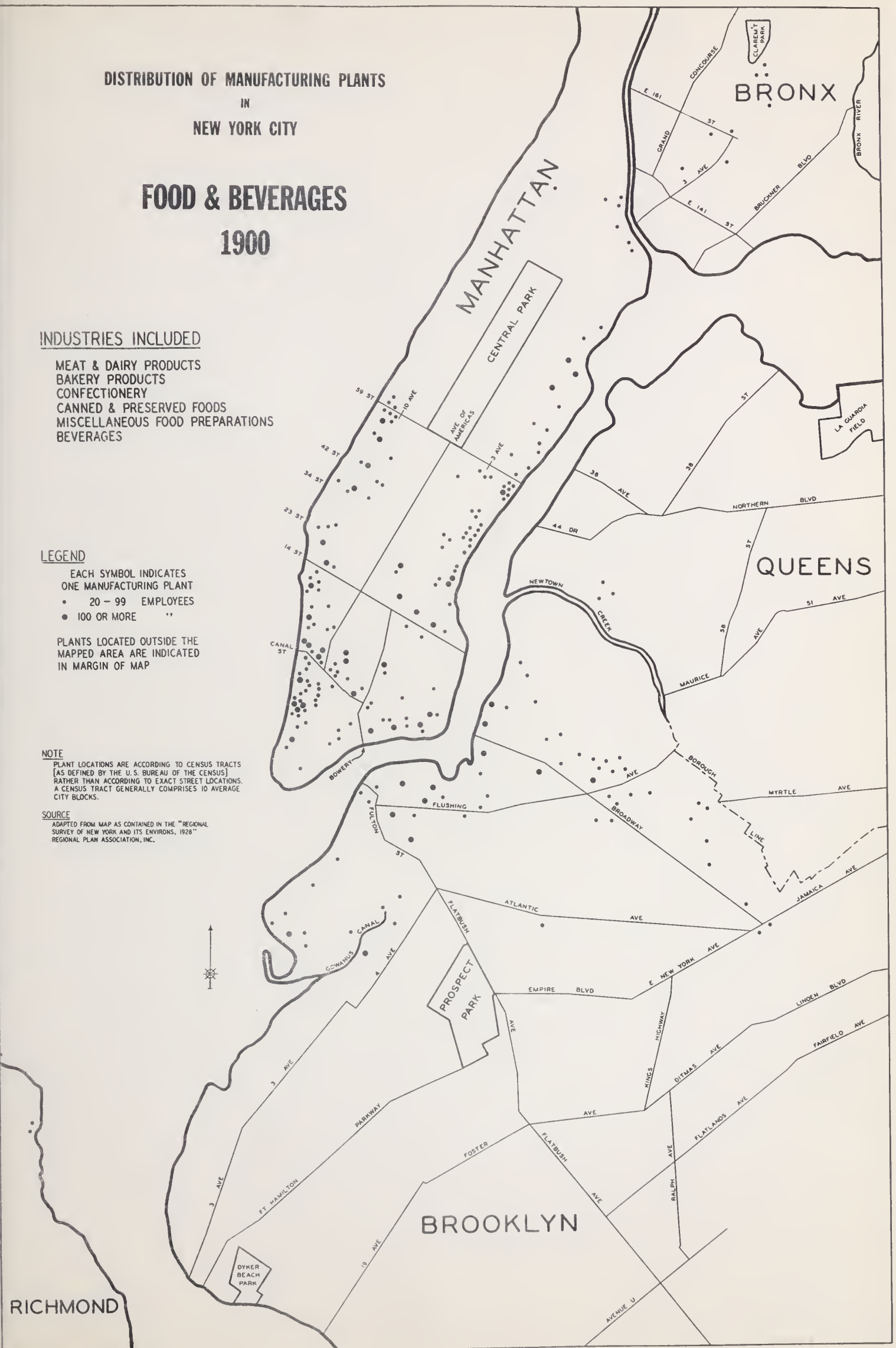
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.





DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

FOOD & BEVERAGES
1922

INDUSTRIES INCLUDED

MEAT & DAIRY PRODUCTS
BAKERY PRODUCTS
CONFECTIONERY
CANNED & PRESERVED FOODS
MISCELLANEOUS FOOD PREPARATIONS
BEVERAGES

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 20 - 99 EMPLOYEES
• 100 OR MORE "

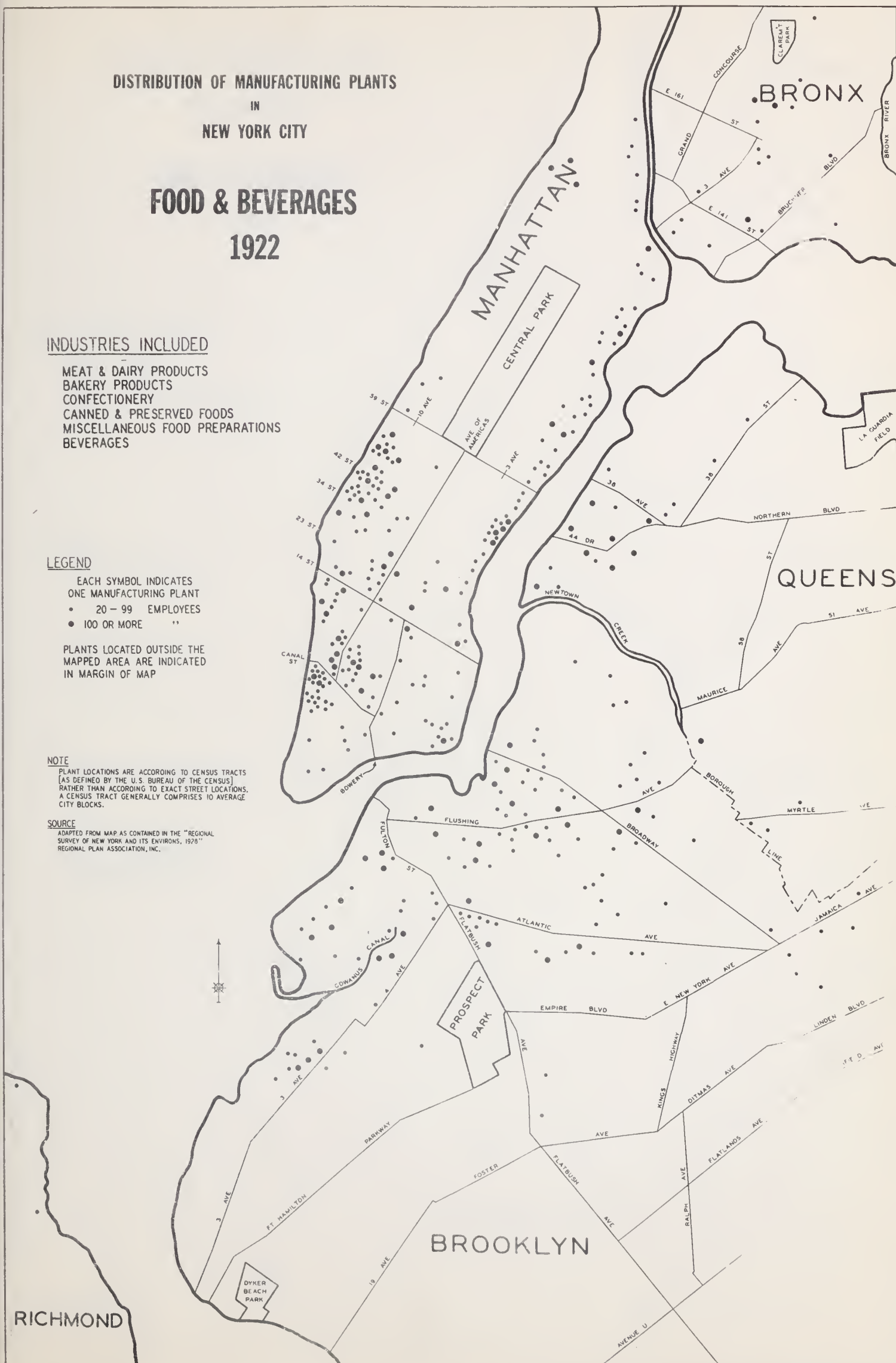
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
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RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.





DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

FOOD & BEVERAGES
1946

INDUSTRIES INCLUDED

MEAT & DAIRY PRODUCTS
BAKERY PRODUCTS
CONFECTIONERY
CANNED & PRESERVED FOODS
MISCELLANEOUS FOOD PREPARATIONS
BEVERAGES

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 25 - 49 EMPLOYEES
• 50 - 99 " "
• 100 OR MORE " "

PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

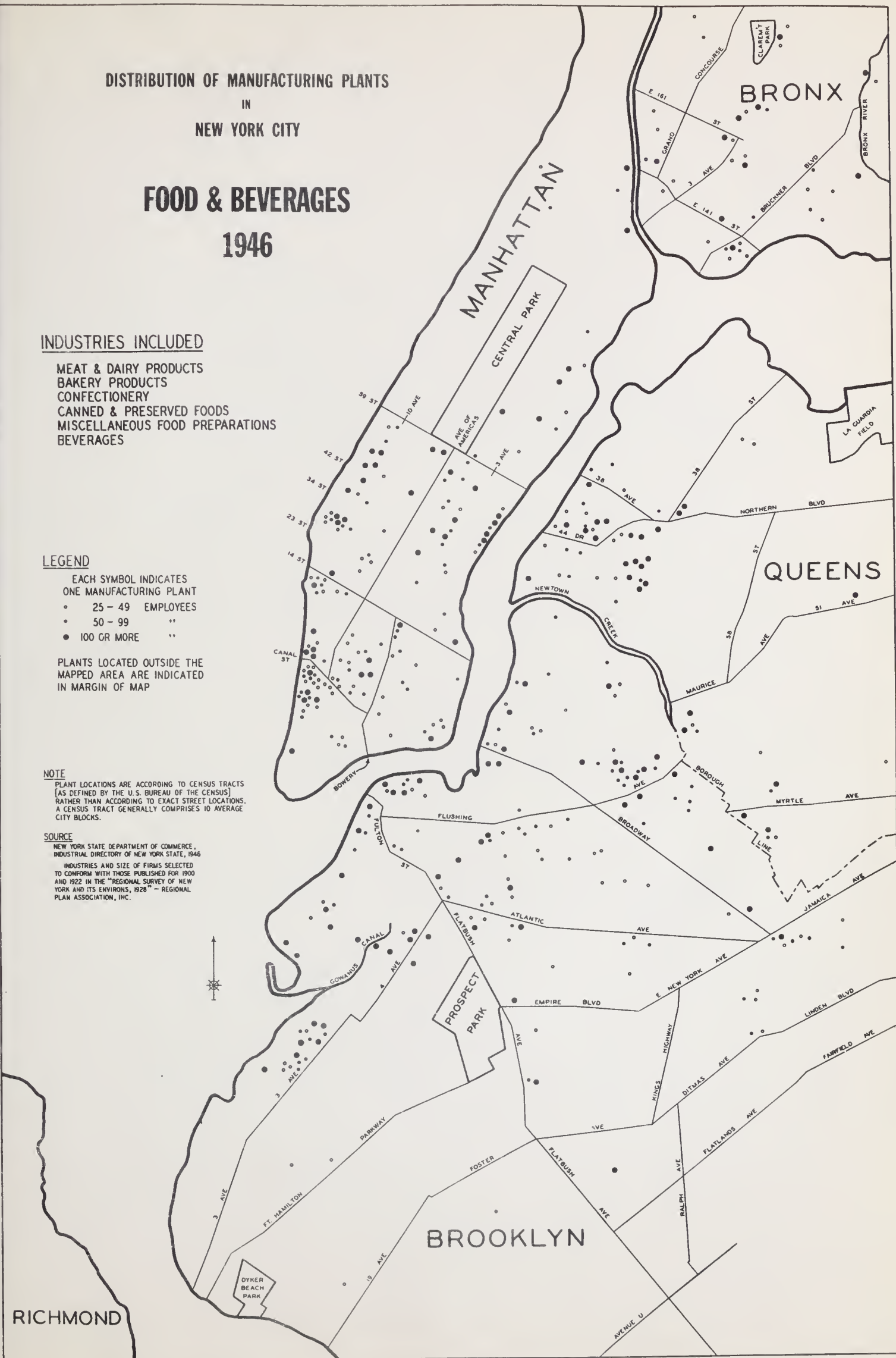
NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
[AS DEFINED BY THE U.S. BUREAU OF THE CENSUS]
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

NEW YORK STATE DEPARTMENT OF COMMERCE,
INDUSTRIAL DIRECTORY OF NEW YORK STATE, 1946

INDUSTRIES AND SIZE OF FIRMS SELECTED
TO CONFORM WITH THOSE PUBLISHED FOR 1900
AND 1922 IN THE "REGIONAL SURVEY OF NEW
YORK AND ITS ENVIRONS, 1928" - REGIONAL
PLAN ASSOCIATION, INC.





MAPS

METAL PRODUCTS AND MACHINERY
FOR THE YEARS 1900, 1922 AND 1946

(Pages 32 - 34, following)

DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

METAL PRODUCTS & MACHINERY
1900

INDUSTRIES INCLUDED

FABRICATED METAL PRODUCTS
MACHINERY & ELECTRICAL EQUIPMENT
TRANSPORTATION EQUIPMENT
PRECISION INSTRUMENTS & APPARATUS
JEWELRY, SILVERWARE & PLATED WARE

LEGEND

- EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 20 - 99 EMPLOYEES
● 100 OR MORE

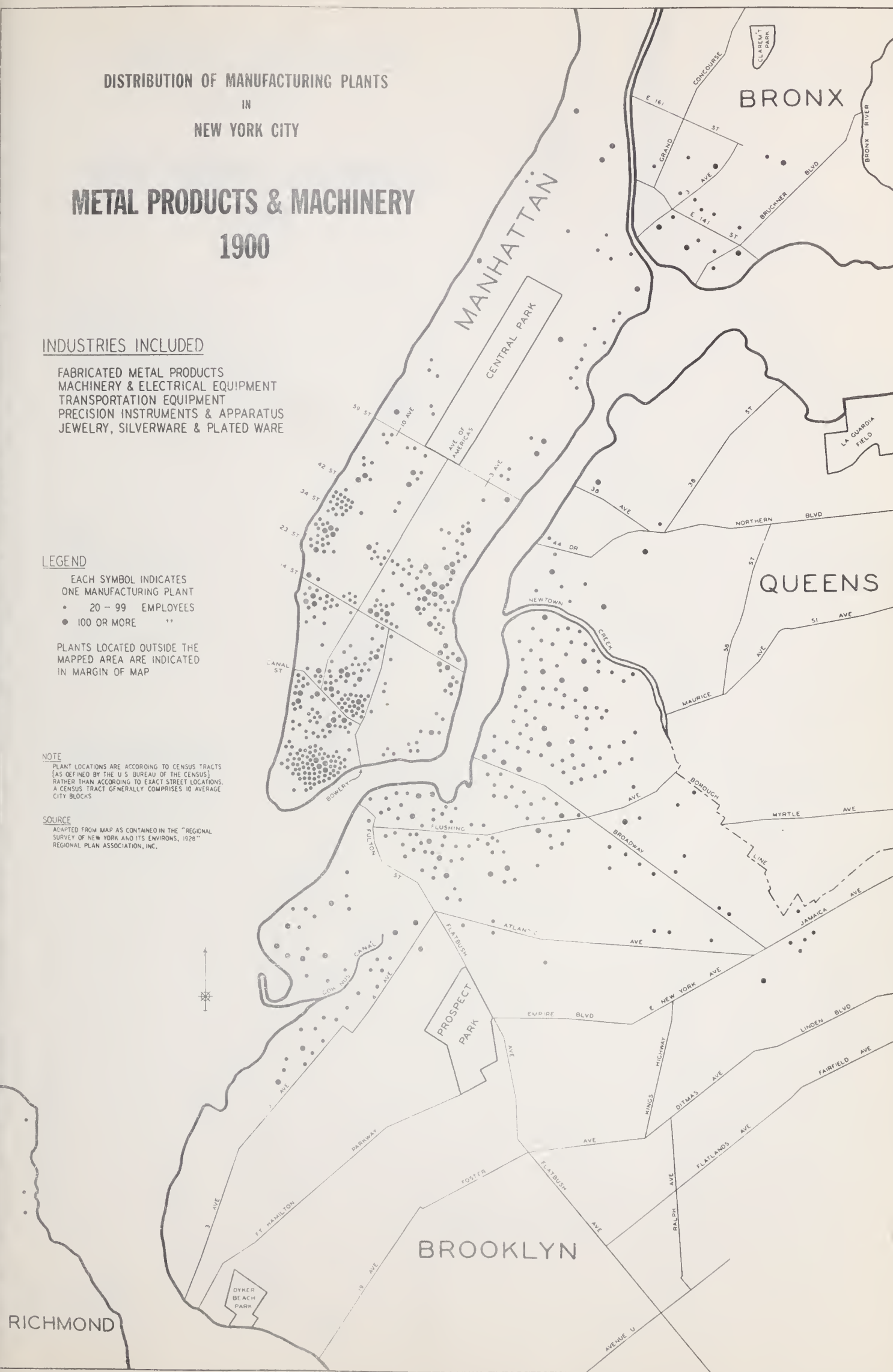
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.





METAL PRODUCTS & MACHINERY

1922

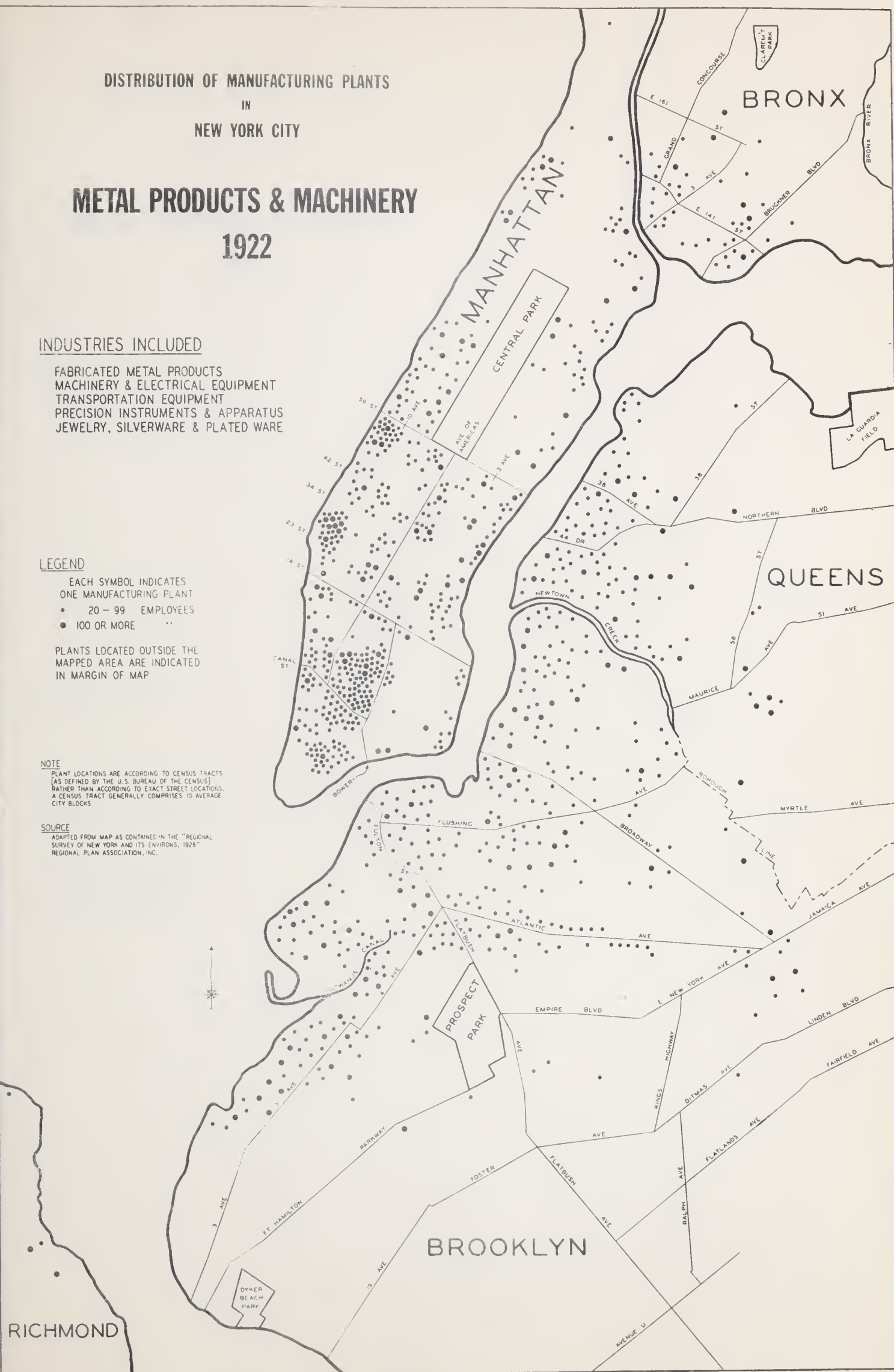
FABRICATED METAL PRODUCTS
MACHINERY & ELECTRICAL EQUIPMENT
TRANSPORTATION EQUIPMENT
PRECISION INSTRUMENTS & APPARATUS
JEWELRY, SILVERWARE & PLATED WARE

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT

- 20 - 99 EMPLOYEES
- 100 OR MORE "

NOTE
PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
[AS DEFINED BY THE U.S. BUREAU OF THE CENSUS]
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS

SOURCE
ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.



METAL PRODUCTS & MACHINERY

1946

FABRICATED METAL PRODUCTS
MACHINERY & ELECTRICAL EQUIPMENT
TRANSPORTATION EQUIPMENT
PRECISION INSTRUMENTS & APPARATUS
JEWELRY, SILVERWARE & PLATED WARE

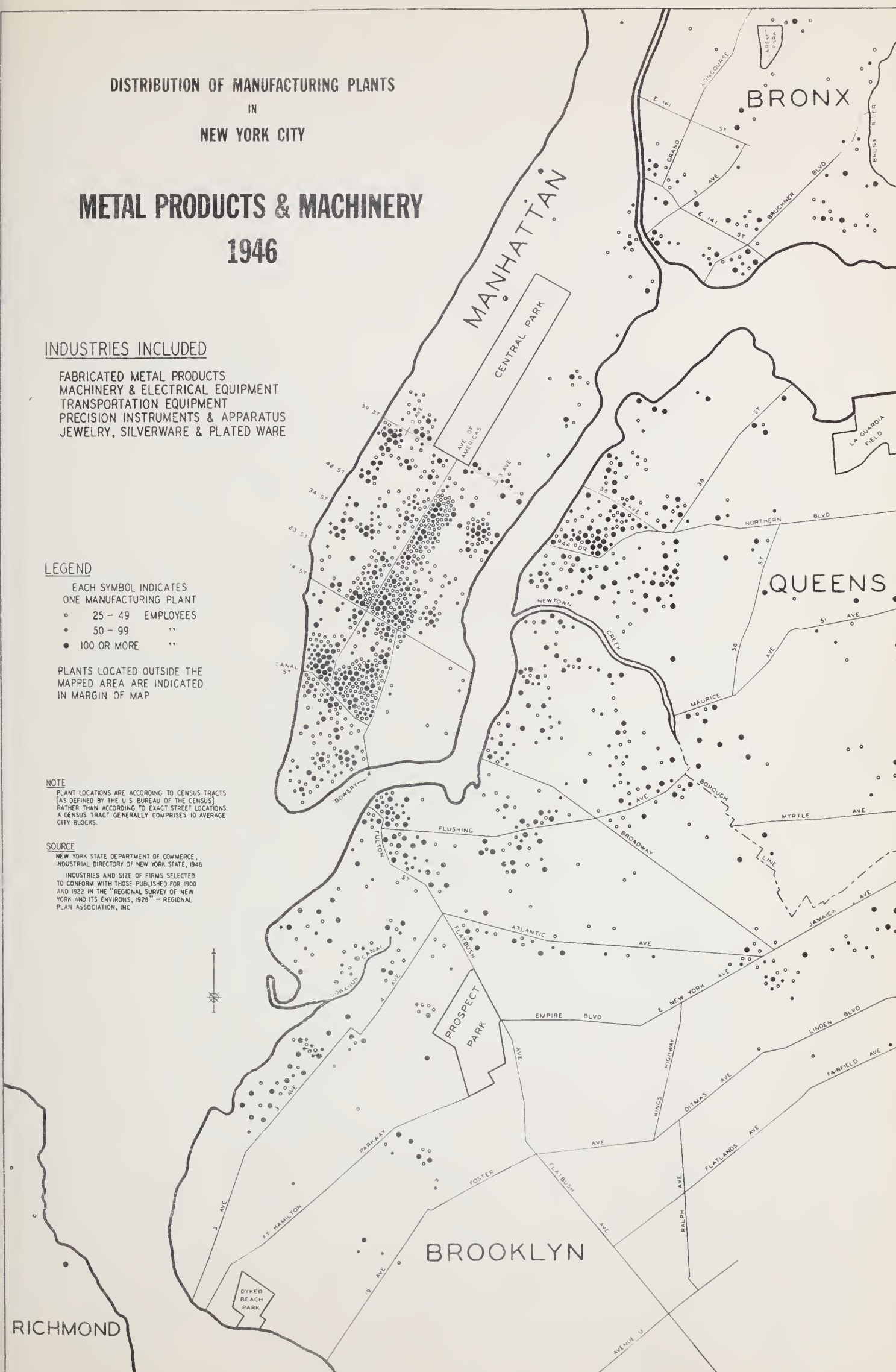
EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT

- 25 - 49 EMPLOYEES
- 50 - 99 "
- 100 OR MORE "

NOTE
PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
[AS DEFINED BY THE U S BUREAU OF THE CENSUS]
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

NEW YORK STATE DEPARTMENT OF COMMERCE,
INDUSTRIAL DIRECTORY OF NEW YORK STATE, 1946

INDUSTRIES AND SIZE OF FIRMS SELECTED TO CONFORM WITH THOSE PUBLISHED FOR 1900 AND 1922 IN THE "REGIONAL SURVEY OF NEW YORK AND ITS ENVIRONS, 1928" - REGIONAL PLAN ASSOCIATION, INC.





MAPS

WOOD PRODUCTS AND FURNITURE
FOR THE YEARS 1900, 1922 AND 1946

(Pages 35 - 37, following)



DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

WOOD PRODUCTS & FURNITURE
1922

INDUSTRIES INCLUDED

LUMBER & PLANING MILL PRODUCTS
FURNITURE & FIXTURES
MISCELLANEOUS SMALL WOOD PRODUCTS

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 20 - 99 EMPLOYEES
● 100 OR MORE "

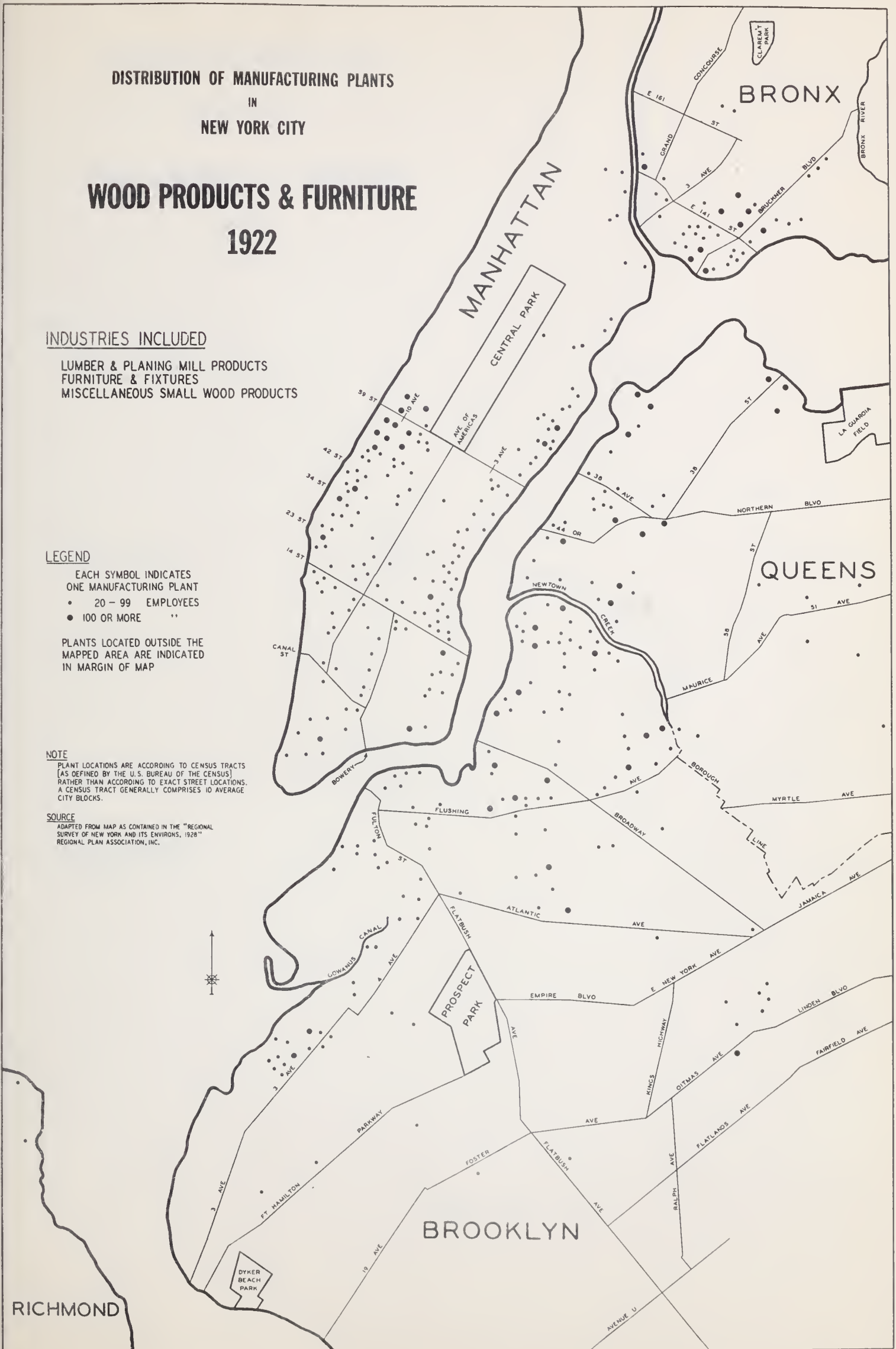
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
[AS DEFINED BY THE U.S. BUREAU OF THE CENSUS]
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.





DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

WOOD PRODUCTS & FURNITURE
1946

INDUSTRIES INCLUDED

LUMBER & PLANING MILL PRODUCTS
FURNITURE & FIXTURES
MISCELLANEOUS SMALL WOOD PRODUCTS

LEGEND

- EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
- 25 - 49 EMPLOYEES
 - 50 - 99 "
 - 100 OR MORE "

PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
IN MARGIN OF MAP

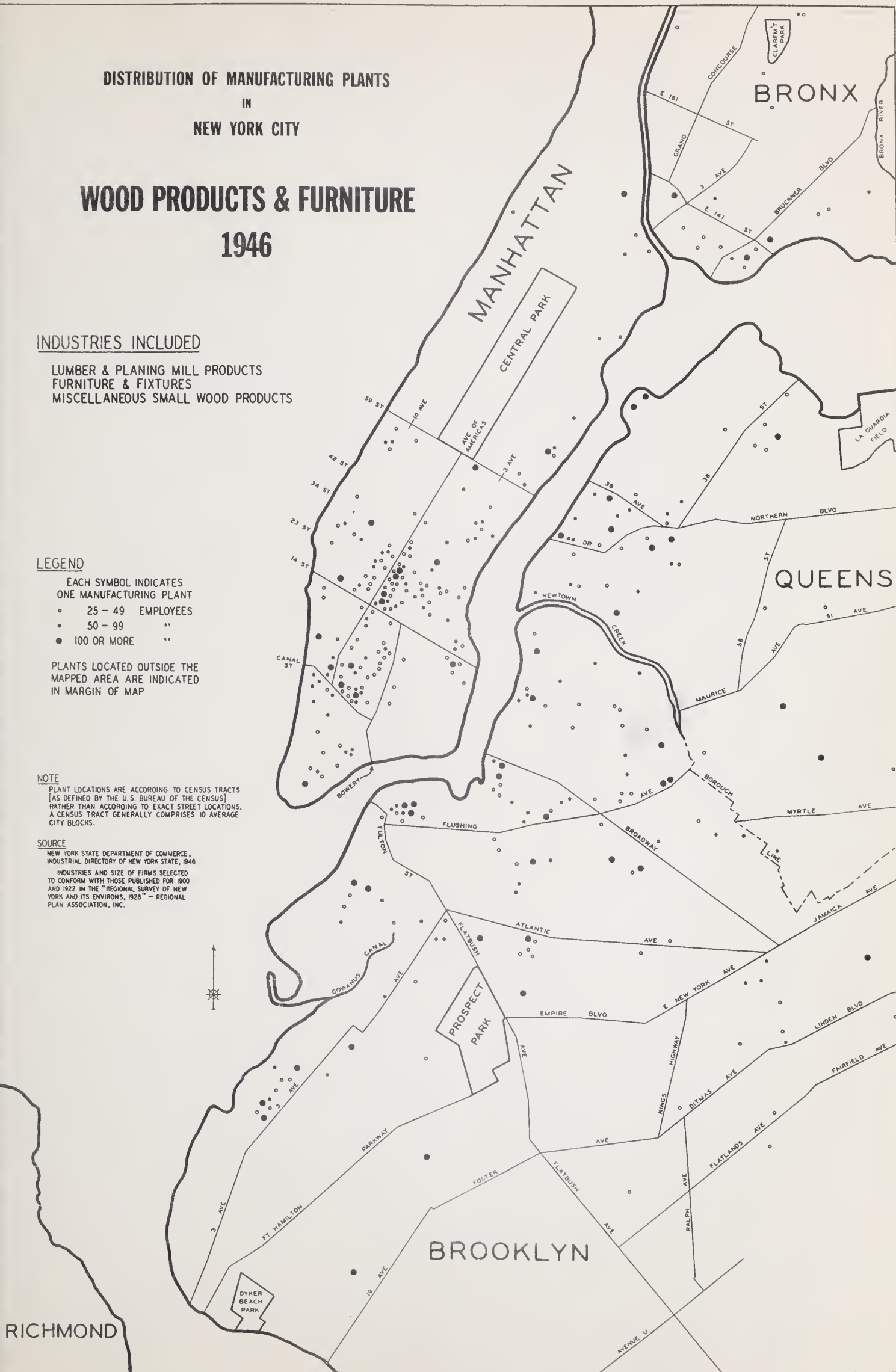
NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
[AS DEFINED BY THE U.S. BUREAU OF THE CENSUS]
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

NEW YORK STATE DEPARTMENT OF COMMERCE,
INDUSTRIAL DIRECTORY OF NEW YORK STATE, 1946

INDUSTRIES AND SIZE OF FIRMS SELECTED
TO CONFORM WITH THOSE PUBLISHED FOR 1900
AND 1922 IN THE "REGIONAL SURVEY OF NEW
YORK AND ITS ENVIRONS, 1928" - REGIONAL
PLAN ASSOCIATION, INC.



MAPS

SIX SELECTED INDUSTRY GROUPS
FOR THE YEARS 1900, 1922 AND 1946

(Pages 38 - 40, following)

MAPS

CHEMICALS AND ALLIED PRODUCTS
FOR THE YEARS 1900, 1922 AND 1946

(Pages 41 - 43, following)

DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

CHEMICALS & ALLIED PRODUCTS
1900

INDUSTRIES INCLUDED

PAINTS & VARNISHES
DRUGS & MEDICINES
PERFUMES & COSMETICS
INDUSTRIAL CHEMICALS
SOAP, CLEANING & POLISHING PREPARATIONS
INK, GLUE, INSECTICIDES, ETC.

LEGEND

EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
• 20 - 99 EMPLOYEES
• 100 OR MORE "

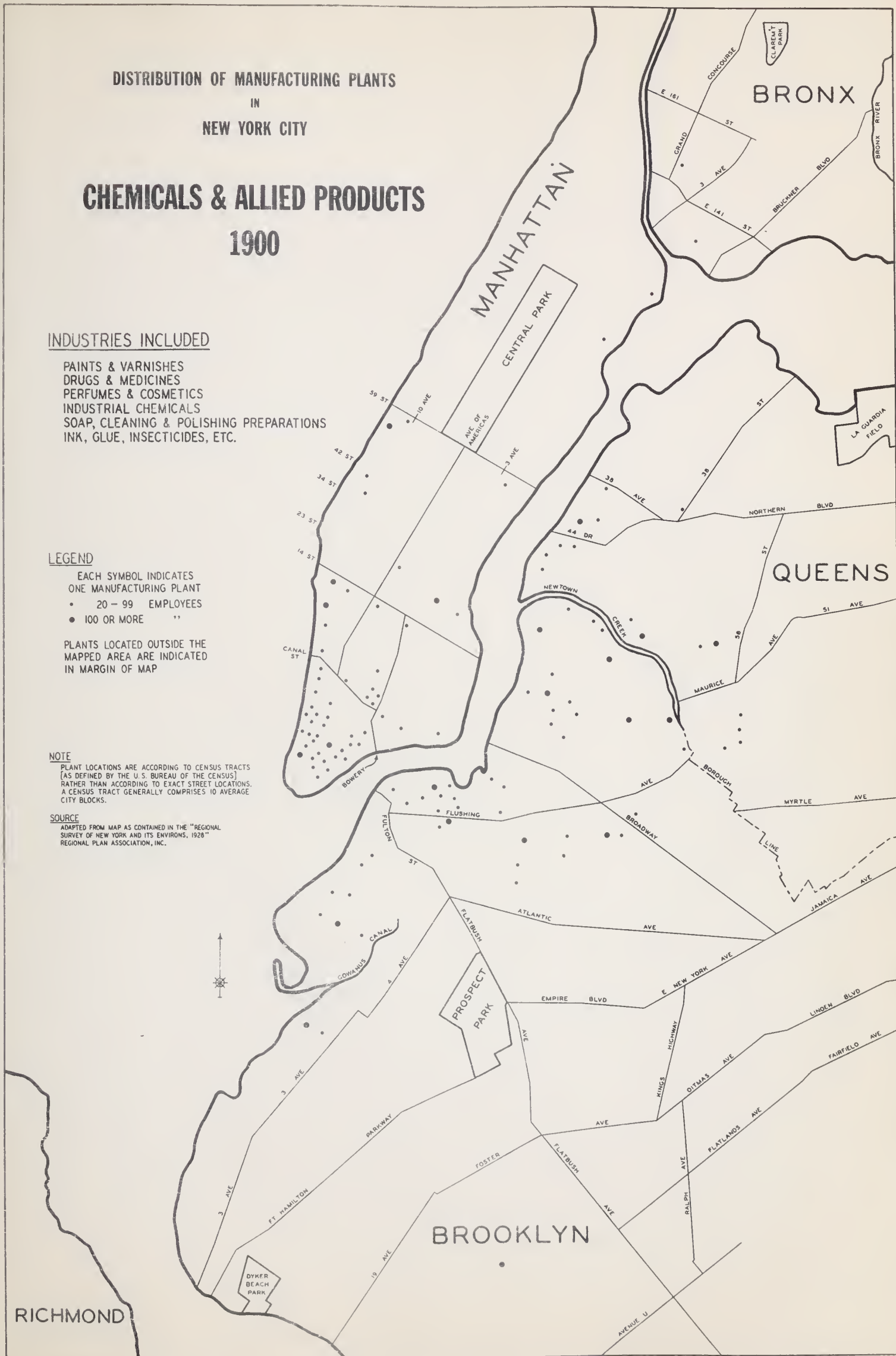
PLANTS LOCATED OUTSIDE THE
MAPPED AREA ARE INDICATED
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NOTE

PLANT LOCATIONS ARE ACCORDING TO CENSUS TRACTS
(AS DEFINED BY THE U. S. BUREAU OF THE CENSUS)
RATHER THAN ACCORDING TO EXACT STREET LOCATIONS.
A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

ADAPTED FROM MAP AS CONTAINED IN THE "REGIONAL
SURVEY OF NEW YORK AND ITS ENVIRONS, 1928"
REGIONAL PLAN ASSOCIATION, INC.



DISTRIBUTION OF MANUFACTURING PLANTS
IN
NEW YORK CITY

CHEMICALS & ALLIED PRODUCTS
1946

INDUSTRIES INCLUDED

PAINTS & VARNISHES
DRUGS & MEDICINES
PERFUMES & COSMETICS
INDUSTRIAL CHEMICALS
SOAP, CLEANING & POLISHING PREPARATIONS
INK, GLUE, INSECTICIDES, ETC.

LEGEND

- EACH SYMBOL INDICATES
ONE MANUFACTURING PLANT
- 25 - 49 EMPLOYEES
 - 50 - 99 "
 - 100 OR MORE "

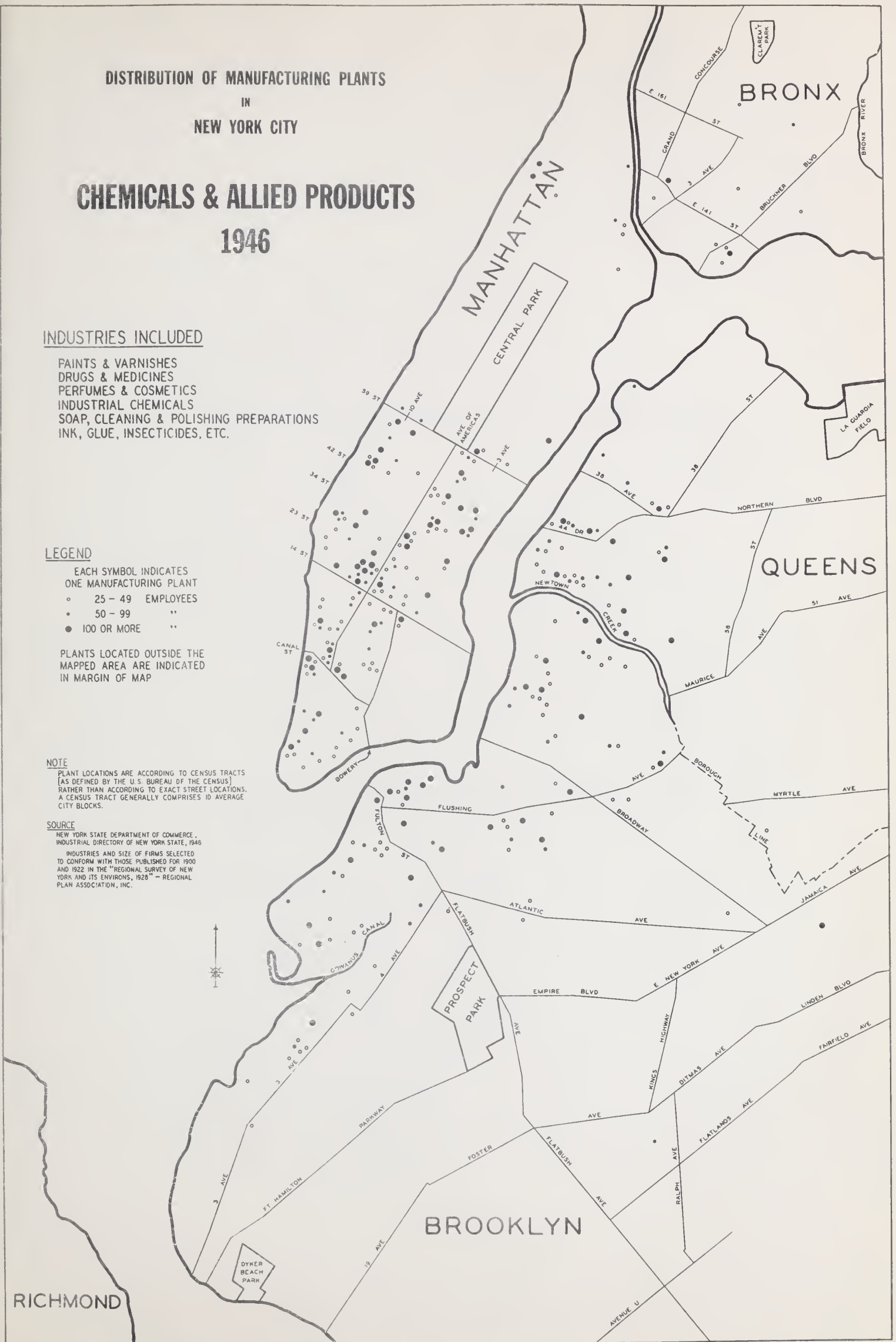
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A CENSUS TRACT GENERALLY COMPRISES 10 AVERAGE
CITY BLOCKS.

SOURCE

NEW YORK STATE DEPARTMENT OF COMMERCE,
INDUSTRIAL DIRECTORY OF NEW YORK STATE, 1946
INDUSTRIES AND SIZE OF FIRMS SELECTED
TO CONFORM WITH THOSE PUBLISHED FOR 1900
AND 1922 IN THE "REGIONAL SURVEY OF NEW
YORK AND ITS ENVIRONS, 1928" - REGIONAL
PLAN ASSOCIATION, INC.



APPENDIX
TO
BUSINESS AND MANUFACTURING REQUIREMENTS

FLOOR SPACE UTILIZATION PER EMPLOYEE IN
MANUFACTURING PLANTS IN NEW YORK CITY

CONTENTS

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PART I

FLOOR SPACE UTILIZATION PER EMPLOYEE IN MANUFACTURING PLANTS IN NEW YORK CITY

Source

The basic information was taken from a survey conducted by the Consolidated Edison Company in 1944 to facilitate the granting of war material sub-contracts in the city. Tabulations based on number of employees and total floor areas utilized were made from over 15,000 questionnaires returned from the firms covered.

Method

The average floor space per employee for each industry has been derived from the above data. This was obtained by totaling the number of employees in an industrial classification and dividing the result into the total floor space in all firms in the group. Originally, a refinement of the sample was attempted, which eliminated those firms reporting which seemed to have disproportionately high or low floor space per employee. This involved calculations for each firm. It was found that the results derived by this method did not differ sufficiently from the other to justify the considerable additional time involved. The range in the data is minimized by using the smallest industrial groupings available in the survey, thereby assuring the maximum of homogeneity within each group.

Coverage

The sample covers 42% of total manufacturing employment, and 50% of all manufacturing firms in New York City. It includes a representative distribution of all firms by size, location, and type of structure. However, the sample varies for each industry and must be applied to total employment figures with discrimination.

Borough Variation

Separate compilations for each borough have been made, and differences in floor space utilization between Manhattan, Brooklyn, Queens, and the Bronx are clearly shown. These differences are explained by the differentiation in land costs and industrial rents in the various boroughs. Many of the industries located in Manhattan which require storage space, have been forced to rent additional space outside of their main plant. The Consolidated Edison survey did not cover plants in Richmond. Consequently no floor space figures for that borough are included in this study.

NEW YORK CITY SUMMARY

Average Number of Square Feet per Employee

<u>Industry</u>	<u>Manhattan</u>	<u>Bronx</u>	<u>Queens</u>	<u>Bklyn.</u>	<u>NYC Total *</u>
Food	464	583	451	632	577 ①
Textiles	206	338	385	520	337
Clothing	160	193	237	284	175
Furs	298	436	286	322	311
Leather	145	137	222	159	148
Wood	439	514	468	584	504
Paper	460	465	759	463	494 ③
Printing	347	293	615	288	346
Chemicals	261	672	455	638	524 ②
Rubber	193	433	271	594	306
Stone	189	1,021	709	339	458 ④
Clay	328	476	976	655	357
Glass	285	206	198	291	258
Metals	254	349	378	428	337
Machine Shops	208	301	291	265	252
Trans. Equip.	309	370	498	311	379 ⑤
Misc. Manuf.	228	309	405	360	264

* City-wide averages and other averages here are based upon the sample covered in the survey. The city-wide averages by industry in Part II are based upon all employment in the industry group. For this reason it is suggested that the latter are more accurate, even though in many cases there is only a slight discrepancy.

MANHATTAN

Summary of Tabulations by Industry

	No. of Firms	Avrg. No. of Emp. per Firm	Avrg. No. of Sq. Ft. per Firm	Avrg. No. Sq. Ft. per Emp.
1. Food & Kindred Products	60	19	8,938	464
2. Textiles	595	23	4,789	206
3. Clothing, Cloth goods & Headwear	1,450	29	4,571	160
4. Fur and Fur Goods	476	7	2,113	298
5. Leather and Leather Goods	739	28	4,117	145
6. Wood Products	555	19	8,376	439
8. Paper Products	284	32	14,800	460
9. Printing	1,624	17	6,049	347
10. Chemicals & Allied Products	261	27	11,787	261
11. Rubber, Bone, Celluloid etc.	195	29	5,571	193
12. Stone & Mineral Products	37	28	5,454	189
13. Clay Products	22	13	4,261	328
14. Glass & Glass Products	158	23	6,624	285
15. Metals & Metal Products	1,707	19	4,803	254
16. Machine Shops	510	50	10,313	208
17. Transportation Equipment	53	46	14,049	309
18. Miscellaneous Manufacturing	906	26	6,017	228

BRONX

Summary of Tabulations by Industry

	<u>No. of Firms</u>	<u>Avrg. No. of Emp. per Firm</u>	<u>Avrg. No. of Sq. Ft. per Firm</u>	<u>Avrg. No. Sq. Ft. per Emp.</u>
1. Food & Kindred Products	96	22	12,649	583
2. Textiles	30	24	8,215	338
3. Clothing, Cloth Goods & Headwear	41	31	6,051	193
4. Fur and Fur Goods	7	56	34,428	436
5. Leather and Leather Goods	23	39	5,272	137
6. Wood Products	89	24	12,074	514
8. Paper Products	16	43	19,925	465
9. Printing	69	12	3,679	293
10. Chemicals & Allied Products	42	31	20,987	672
11. Rubber, Bone, Celluloid etc.	16	21	8,867	433
12. Stone & Mineral Products	24	22	22,046	1,021
13. Clay Products	2	53	25,250	476
14. Glass & Glass Products	11	18	3,627	206
15. Metals & Metal Products	155	39	13,700	349
16. Machine Shops	75	53	15,778	301
17. Transportation Equipment	19	23	8,487	370
18. Miscellaneous Manufacturing	68	17	5,180	309

QUEENS

Summary of Tabulations by Industry

	No. of Firms	Avrg. No. of Emp. per Firm	Avrg. No. of Sq. Ft. per Firm	Avrg. No. Sq. Ft. per Emp.
1. Food & Kindred Products	84	63	28,352	451
2. Textiles	111	27	10,433	385
3. Clothing, Cloth Goods & Headwear	23	60	14,251	237
4. Fur and Fur Goods	3	144	41,333	286
5. Leather and Leather Goods	21	93	14,866	222
6. Wood Products	102	29	13,785	468
8. Paper Products	34	67	50,795	759
9. Printing	19	49	30,447	615
10. Chemicals & Allied Products	90	29	13,295	455
11. Rubber, Bone, Celluloid etc.	38	79	21,537	271
12. Stone & Mineral Products	21	34	24,374	709
13. Clay Products	3	55	53,333	976
14. Glass & Glass Products	23	56	10,729	198
15. Metals & Metal Products	273	37	14,519	378
16. Machine Shops	239	49	14,371	291
17. Transportation Equipment	40	153	76,037	498
18. Miscellaneous Manufacturing	56	31	12,647	405

BROOKLYN

Summary of Tabulations by Industry

		<u>No. of Firms</u>	<u>Avrg. No. of Emp. per Firm</u>	<u>Avrg. No. of Sq. Ft. per Firm</u>	<u>Avrg. No. Sq. Ft. per Emp.</u>
1.	Food & Kindred Products	385	37	23,479	632
2.	Textiles	255	36	18,575	520
3.	Clothing, Cloth Goods & Headwear	174	27	7,574	284
4.	Fur and Fur Goods	25	53	17,108	322
5.	Leather and Leather Goods	134	55	8,681	159
6.	Wood Products	464	21	12,517	584
8.	Paper Products	150	56	26,051	463
9.	Printing	166	22	6,352	288
10.	Chemicals & Allied Products	197	29	18,338	638
11.	Rubber, Bone, Celluloid etc.	84	29	17,084	594
12.	Stone & Mineral Products	74	21	7,206	339
13.	Clay Products	4	9	6,225	655
14.	Glass & Glass Products	64	25	7,377	291
15.	Metals & Metal Products	692	35	14,988	428
16.	Machine Shops	367	71	19,071	265
17.	Transportation Equipment	106	76	23,628	311
18.	Miscellaneous Manufacturing	238	25	9,148	360

PART II

TOTAL MANUFACTURING FLOOR SPACE IN NEW YORK CITY

This material was compiled in order to obtain an estimate of the total floor space used by manufacturing industries in New York City. It is based upon floor space per employee data derived in Part I applied to 1947 employment data furnished by the New York State Department of Labor.*

Unfortunately it was not possible to secure employment data by Borough for 1947. The latest Borough breakdowns for manufacturing employment were made in 1939 by the U. S. Census of Business. Therefore two methods were chosen to arrive at the total floor space figure. They are as follows:

1. The percent of total employment in each borough (1939 Census information) was applied to 1,011,373 total city employment (1947) and thereby the estimate of total borough employment was derived. These estimates, multiplied by sq. ft./emp. for all employment in the borough, produced the following four borough total:

<u>Borough</u>	<u>% of Employment</u>	<u>Employment</u>	<u>Average Sq. Ft. per Emp.</u>	<u>Total Fl.Space</u>
Manhattan	58.6	592,665	251	148,758,915
Brooklyn	26.4	267,003	422	112,675,266
Bronx	3.6	36,409	396	14,417,964
Queens	10.2	103,160	391	40,335,560
Richmond	1.2	12,136	-	-
N.Y.C. Total	100.0	1,011,373	313	316,187,705

2. Employment by sub-group (New York State Unemployment Insurance Division, March, 1947) for the city was multiplied by the average square feet of floor space per employee in each sub-group. This gives New York City a total of 297,298,224 sq. ft. of manufacturing floor space and an average of 294 square feet per employee. Detailed tables showing floor space by industry sub-group is given in the tables on the following pages.

* The sample employment figures (Consolidated Edison Survey, 1944) were classified according to the Industrial Directory of New York State, 1940 while the total employment figures used herein (New York State Unemployment Insurance Division March, 1947 are classified according to the Standard Industrial Classifications. It was therefore difficult to match employment groups in some cases. In these instances the sample employment figure for an industrial sub-group was larger than the total employment figure for that group. This discrepancy is also due to the difference in employment between 1944 and 1947.

NEW YORK CITY TOTAL

	No. of Emp. (Con.Ed. 1944)	No. of Emp. (N.Y.S.U.I.D.)*	Total No. of Sq.Ft.
1. Food & Kindred Products	22,810	82,296	47,535,730
2. Textiles	26,688	23,795	13,394,560
3. Clothing, Cloth Goods & Headwear	47,973	341,821	50,677,169
4. Fur and Fur Goods	5,535	14,495	3,842,966
5. Leather and Leather Goods	31,121	44,148	6,321,814
6. Wood Products	25,652	34,867	16,244,159
8. Paper Products	20,505	25,810	12,571,740
9. Printing	33,750	123,633	37,621,670
10. Chemicals & Allied Products	16,711	36,533	20,325,937
11. Rubber, Bone, Celluloid etc.	11,361	20,631	11,708,010
12. Stone & Mineral Products	3,876	4,364	2,204,979
13. Clay Products	599	816	447,984
14. Glass & Glass Products	6,797	8,702	2,157,384
15. Metals & Metal Products	72,800	82,598	26,712,102
16. Machine Shops	67,049	88,186	21,005,575
17. Transportation Equipment	18,938	27,244	10,090,582
18. Miscellaneous Manufacturing	32,868	51,434	14,435,863
TOTAL	445,033	1,011,373	297,298,224 †

† NOTE: This total floor space figure (297,298,224) is not the same as that on page A-7 (316,187,705) because of a difference in method. The 316,187,705 figure was derived from estimated 1947 employment by borough based on the 1940 distribution. Unavoidable distortion in the borough distribution results in a higher total floor space figure. The lower figure is the more accurate since it is based on the actual city-wide employment in 1947 in each industry group.

* New York State Unemployment Insurance Division - March 1947

GROUP 1

FOOD AND KINDRED PRODUCTS INCLUDING TOBACCO

		No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq.Ft. per Emp.	Total Sq.Ft.
1.	Dairy Prod. & Ice-cream	2,534	3,040	398	1,209,920
2.	Meat Products	2,169	7,838	459	3,597,642
3.	Curing & Packing Fish	272	522	475	247,950
4.	Milling of Grain	123	509	997	507,473
5.	Bakeries (more than 10 employees)	5,450	24,387	657	16,022,259
6.	Canning & Preserving Foods	1,879	4,099	810	3,320,190
7.	Sugar, Molasses and Syrup Refining	600	3,470	100	347,000
8.	Chocolate, Gum & Confectionary	4,693	12,904	280	3,613,120
9.	Beverages (not made in breweries)	1,634	2,449	1,138	2,786,962
10.	Breweries	697	9,355	987	9,233,385
11.	Food Sundries	2,012	10,163	545	5,538,835
12.	Manufactured Ice	251	1,431	153	218,943
13.	Tobacco Manufacturers	496	2,129	419	892,051
14.	Cleaning Beans & Grain and Packing Seed	-	-	-	-
TOTAL		22,810	82,296	578	47,535,730

GROUP 2

TEXTILES: SPINNING, KNITTING, WEAVING AND FINISHING

		No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq.Ft.
1.	Knit Goods	8,375	2,626	232	609,232
2.	Silk, Rayon Weaving	2,098	1,524	474	722,376
3.	Carpet & Rugs	315	296	412	121,952
4.	Cotton Goods	See 2			
5.	Embroiderie Manuf.	6,137	7,833	763	5,976,579
6.	Passementerie Trimmings	1,378	151	305	46,055
7.	Braids, Fringes, etc.	See 6			
8.	Narrow Fabrics, webbing etc.	2,538	2,423	973	2,357,579
9.	Bleaching, Dyeing etc.	5,042	6,869	422	2,898,718
10.	Winding & Coning Yarn	441	1,788	283	506,004
11.	Woolen & Worsted Goods	364	185	849	157,065
TOTAL		26,688	23,795	563	13,394,560

GROUP 3

CLOTHING & OTHER CLOTH GOODS & HEADWEAR

	No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
A. Men & Boys Clothing & Furnishing				
1. Men & Boys Clothing	1,477	41,531	247	10,258,157
2. Uniforms, Overalls etc.	1,130	5,142	116	596,472
3. Shirts, Collars & Underwear	767	5,643	183	1,032,669
4. Neckwear	1,324	4,463	123	548,949
SUB-TOTAL	4,698	56,779	219	12,436,247
B. Women & Children				
1. Coats, Suits & Skirts	730	52,144	110	5,735,840
1A. Women's Sportswear	243	4,836	93	449,748
2. Dresses	1,506	82,822	111	9,193,242
3. House Dresses	498	2,871	160	459,520
4. Children's Clothing	1,392	17,273	165	2,850,045
5. Women's Blouses	201	14,798	116	1,716,568
6. Women's Neckwear	903	3,235	120	388,200
7. Underwear etc.	690	11,093	108	1,198,044
8. Negligees etc.	771	18,996	145	2,754,420
9. Brassieres etc.	See B8			
SUB-TOTAL	6,934	208,069	119	24,745,627
C. Wearing Apparel				
1. Raincoats	1,250	2,931	112	328,272
2. Theatrical Costumes	See C5			
3. Bathrobes	593	4,024	297	1,195,128
4. Suspenders & Garters	225	689	188	129,532
5. Miscellaneous	2,421	1,088	112	121,856
SUB-TOTAL	4,489	8,732	203	1,774,788
D. Headwear				
1. Mens, Felt & Straw	284	1,973	287	566,251
2. Men & Boys Caps	265	11,721	170	1,992,570
3. Womens, Felt, Straw & Fabric	2,917	15,814	116	1,834,424
4. Childrens & Infants	See D3			
5. Hat Linings	-	-	-	-
SUB-TOTAL	3,466	29,508	149	4,393,245

GROUP 3 (CONT'D)

	No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
E. Cloth Goods (not apparel)				
1. Hemstitching, pleating etc.	3,502	5,637	129	727,173
2. Bias & st. cut Bindings	See E5			
3. Belt tops, Buttonholes	See E5			
4. Artificial Flowers	4,664	6,556	124	812,944
5. Misc. Trimming & Novelties	3,362	9,364	180	1,685,520
6. Misc. House Furn. Goods	7,766	7,879	219	1,729,443
7. Art Needlework	See E5			
8. Awnings, Tents & Shades	946	2,468	327	807,036
9. Burlap, Heavy Cotton etc.	2,438	1,390	385	535,150
10. Umbrellas	1,244	751	148	111,148
11. Misc. Cloth Goods Not Elsewhere Classified	4,464	4,688	196	918,848
SUB-TOTAL	28,386	38,733	189	7,327,262
TOTAL	47,973	341,821	148	50,677,169

GROUP 4

FUR AND FUR GOODS, INCLUDING FUR DRESSING

1. Fur Dressing, Dyeing & Blending	3,807	2,682	339	909,198
2. Fur Pointing	-	-	-	-
3. Manufactured Furs	1,701	11,266	254	2,861,564
4. Fur Lining	27	547	132	72,204
TOTAL	5,535	14,495	265	3,842,966

GROUP 5

LEATHER AND LEATHER GOODS

1. Tanning Hides	681	606	451	273,360
2. Shoes and Slippers	11,995	16,797	140	2,351,580
3. Gloves and Mittens	2,013	4,298	93	399,714
4. Hand Bags, Pocketbooks etc.	9,320	14,066	130	1,828,580
5. Belts and Belting	2,359	4,750	157	745,750
6. Leather Coats & Sportswear	-	-	-	-
7. Hat Leathers & Leather Sweatbands	227	929	240	222,960
8. Leather Cutting, Finishing etc.	See 1			
9. Leather Goods (not else- where classified)	4,526	2,702	185	499,870
TOTAL	31,121	44,148	143	6,321,814

GROUP 6

WOOD PRODUCTS

	No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
1. Lumber & Planing Mill Prod.	3,845	2,305	858	1,977,690
1A. Cabinet Work & Store Fix.	2,575	4,898	544	2,664,512
2. Boxes, Baskets & Crates	1,625	1,914	730	1,397,220
3. Cooperage	488	299	1,072	320,528
4. See 1A (store fixtures)	See 1A			
5. Furniture & Upholstery	6,964	11,544	451	5,206,344
5A. See 5	-	-	-	-
6. Coffins & Caskets	376	1,114	612	681,768
7. Musical Instruments	936	2,887	262	756,394
8. Brooms & Brushes	2,592	2,243	370	829,910
9. Picture & Mirror Frames	1,130	1,213	327	396,651
10. Shoe Lasts & Wooden Heels	See 11			
11. Pattern: Wood & Metal	993	2,012	293	589,516
12. Cork Products	448	1,112	362	402,544
13. Woodturning and Wooden Products not elsewhere classified	<u>3,680</u>	<u>3,326</u>	<u>307</u>	<u>1,021,082</u>
TOTAL	25,652	34,867	467	16,244,159

GROUP 8

PAPER PRODUCTS

1. Paper Boxes, Tubes, Cups etc.	11,494	13,300	507	6,743,100
2. Paper Bags	819	1,760	439	772,640
3. Converted Paper Products	6,842	10,000	463	4,630,000
4. Paper Coating & Finishing	<u>1,350</u>	<u>750</u>	<u>568</u>	<u>426,000</u>
TOTAL	20,505	25,810	487	12,571,740

GROUP 9

PRINTING

	No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
1. Newspapers & Periodicals	3,366	43,865	225	9,819,625
2. Book & Job	17,497	17,795	392	6,975,640
3. Bookbinding	4,098	11,078	293	3,245,854
4. Sample Cards	1,256	1,256	160	200,960
5. Lithographing	3,013	9,301	450	4,176,149
6. Music Printing	324	2,325	279	648,675
7. See 5	See 5			
8. Photo. Eng. & Rotogravure	2,602	33,260	312	11,474,700
9. See 8	See 8			
10. Electro & Stereotyping	644	1,627	245	398,615
11. Engraving & Embossing	See 8			
12. Multigraphing & Mimeographing	950	3,126	202	631,452
TOTAL	33,750	123,633	304	37,621,670

GROUP 10

CHEMICALS & ALLIED PRODUCTS

1. Chemicals & Dyestuffs (basic)	2,103	1,081	920	994,520
2. Disinfectants, Deodorants, etc.	773	800	663	530,400
3. Medicines, Drugs, Serums, etc.	3,626	9,689	422	4,088,758
4. Cosmetics & Toilet Preparations	5,010	5,782	295	1,705,690
5. Cleaning & Washing Com- pounds (not soap)	1,038	5,964	742	4,425,288
6. Animal Products	178	51	1,338	68,238
7. Soap	See 5			
8. Wax Products-Candles, Crayons	531	1,305	490	639,450
9. Paints, Varnishes, Printing Ink etc.	1,535	7,593	775	5,884,575
10. Calcimine, Putty & Whiting	299	61	501	30,561
11. Vegetable Oils & Gums	122	670	750	502,500
12. Essential Oils & Flavoring	358	604	1,024	618,496
13. Wood, Coal & Petroleum Prod.	794	1,621	65	105,365
14. Miscellaneous Chemicals	344	1,312	558	732,096
TOTAL	16,711	36,533	556	20,325,937

GROUP 11

RUBBER, BONE, CELLULOID & COMPOSITION GOODS

	No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
1. Rubber Goods	1,924	3,401	398	1,353,598
2. Composition Goods	7,595	7,500	277	2,077,500
3. Fountain Pens & Pencils	834	1,944	621	1,207,224
4. Composition Jewelry & Novelties	<u>1,008</u>	<u>7,786</u>	<u>908</u>	<u>7,069,688</u>
TOTAL	11,361	20,631	564	11,708,010

GROUP 12

STONE AND MINERAL PRODUCTS

2. Stone Cutting	1,308	784	895	701,680
3. Plaster, Cement Prod. etc.	687	2,004	381	763,524
4. Plaster, Ornamental, Statuary	769	518	252	130,536
5. Mica Goods	943	281	509	143,029
6. Ground Mineral Products	<u>169</u>	<u>777</u>	<u>600</u>	<u>466,200</u>
TOTAL	3,876	4,364	505	2,204,979

GROUP 13

CLAY PRODUCTS

1. Bricks	-	-	-	-
2. Tile and Clay Products	<u>599</u>	<u>816</u>	<u>549</u>	<u>447,984</u>
TOTAL	599	816	549	447,984

GROUP 14

GLASS AND GLASS PRODUCTS

1. Glassware, Blowing	97	673	334	224,782
2. Lens & Optical Goods	2,505	4,340	175	759,500
3. Cut, Ground & Decorated Glass, Art Glass and Mirrors	<u>4,195</u>	<u>3,689</u>	<u>318</u>	<u>1,173,102</u>
TOTAL	6,797	8,702	248	2,157,384

GROUP 15

METALS & METAL PRODUCTS

	No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
1. Struct., Ornam. & Arch. Iron	5,916	4,648	628	2,918,944
2. Art Metal, Wrought Iron	See 1			
3. Boilers & Tanks	1,142	767	593	454,831
4. Iron Foundries	953	1,108	578	640,424
4A. Furnace & Heating Apparatus	977	3,241	470	1,523,270
5. Brass, Bronze Foundries	2,348	1,955	286	559,130
6. Hat Dies & Blocks	243	1,818	270	489,240
7. Smelting, Non-ferrous	1,224	2,822	543	1,532,346
8. Smelting, Prec. Metals	367	79	288	22,752
9. Forgings	475	637	388	247,156
10. Machine Tool Attachments	5,358	4,314	242	1,043,988
11. Brass Engraving	30	1,938	267	517,446
12. Cutlery, Saws & Handtools	1,368	5,448	282	1,536,336
13. Screw Machine Products	4,938	2,250	329	838,950
14. Fireproof Equipment	5,033	2,068	400	827,200
15. Kitchen Equipment	1,723	7,225	484	3,496,900
16. Lighting Fixtures	5,105	6,949	273	1,897,077
17. Sheet Metal Goods	11,637	2,823	442	1,247,766
18. Wire and Wire Goods	4,068	3,729	368	1,372,272
19. Wire Springs	See 18			
20. Silver, Pewter, etc. Plated	1,429	3,328	216	718,848
21. Jewelry, Gold, Silver, Plat.	7,856	7,165	112	802,480
22. Rhinestone, Novelty Jewelry	2,062	9,043	110	994,730
23. Engraving, Jewelry & Silverware	See 11			
24. Plating & Polishing	2,315	3,090	507	1,566,630
25. Japanning & Enamelling	511	487	678	330,186
26. Metal Goods (all other)	5,722	5,666	200	1,133,200
27. Metal Treating & Processing	See 26			
TOTAL	72,800	82,598	323	26,712,102

GROUP 16

MACHINE SHOPS: MACHINE BUILDING
MACHINED PROD. & GENERAL MACH. WORK

	No. of Emp. (Con.Ed. 1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
1. Elevators, Dumbwaiters, etc.	1,074	1,164	648	754,272
2. Engines, Motors, Pumps etc.	2,884	712	431	306,872
3. Gen. Machine Bldg. & Shops	7,442	7,425	239	1,774,575
4. Spec. Machine Bldg. & Parts	15,493	21,586	298	6,432,628
5. Electrical Appar. & Appliances	14,729	17,602	199	3,502,798
6. Radio & Radio Parts	11,111	24,490	205	5,020,450
7. Gears, Valves, Bearings etc.	1,947	1,814	363	658,482
8. Fine Machines	2,752	1,207	278	335,546
9. Instruments	7,038	7,764	221	1,715,844
10. Watches and Clocks	2,579	4,422	114	504,108
TOTAL	67,049	88,186	238	21,005,575

GROUP 17

TRANSPORTATION EQUIPMENT

1. Steam & Electric RR Cars	8	492	350	172,200
2. Automobile & Truck Bodies	1,457	1,236	464	573,504
3. Auto Parts	2,792	5,658	344	1,946,352
4. Airplanes & Parts	4,536	1,904	196	373,184
5. Vehicles, not elsewhere classified	478	74	463	34,262
6. Boat & Ship Building	9,675	17,880	391	6,991,080
TOTAL	18,938	27,244	370	10,090,582

GROUP 18

MISCELLANEOUS MANUFACTURING

	No. of Emp. (Con.Ed.1944)	No. of Emp. (N.Y.S.U.I.D.)	Avrg. Sq. Ft. per Emp.	Total Sq. Ft.
1. Advertising Signs, Displays, etc.	6,618	4,765	358	1,705,870
2. Buttons, Buckles (all kinds)	4,060	3,567	171	609,957
3. Dental Labs & Supplies	841	2,309	179	413,311
4. Display Fixtures	See 1			
5. Dolls, Doll's Clothing & Parts	6,620	4,283	165	706,695
6. Feather Cleaning & Dyeing	773	6,895	398	2,744,210
7. Feather Trimmings & Novelties	See 6			
8. Hair Goods	626	836	211	176,396
9. Jewelry Cases (all kinds)	-	1,174	281*	329,894
10. Lamp Shades	914	1,475	226	333,350
11. Luggage (all kinds)	3,527	2,987	222	663,114
12. Maps	-	892	281*	250,652
13. Mattresses, Box Springs, etc.	965	2,174	531	1,154,394
14. Pencils	-	2,285	281*	642,085
15. Photographic Apparatus etc.	2,221	5,112	216	1,104,192
16. Rubber Stamps & Stencils	454	963	236	227,268
17. Sporting Goods	256	820	390	319,800
18. Surgical Goods	1,579	3,155	287	905,485
19. Toys and Games	3,265	4,490	265	1,189,850
20. Miscellaneous Manufactur- ing not elsewhere classified	149	3,252	295	959,340
TOTAL	32,868	51,434	281	14,435,863

* Estimated sq. ft./emp. taken from sq. ft./emp. for the industry.

SUPPLEMENTARY TECHNICAL MEMORANDUM
BUSINESS AND MANUFACTURING REQUIREMENTS

REPORT OF INTERVIEWS

THE PLAN FOR REZONING
City Planning Commission
City of New York

Harrison, Ballard & Allen
February, 1949

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INTRODUCTION

In order to obtain information for the Business and Manufacturing Requirements Report, a series of interviews was conducted by a staff member. It was hoped that these interviews would reveal material not found in the published sources. Information particularly sought on an industry-by-industry basis was: estimates of square feet-employee ratios; type of structure used; whether owner occupied or rented; special facilities needed; preferred location; and anticipated employment, space needs and location.

The program was experimental, with the scope and procedure modified as the interviewing proceeded. In the first phase, selecting the contacts, a great variety of individuals were consulted, usually by telephone, until those interviewed included only key people who could provide the maximum information in a limited period of time.

It was soon realized that certain industries are so large and diverse, and have so many important branches (as in metals and chemicals) that too many interviews would have been required to cover the entire industry. Even had all these interviews been held, they would probably not have revealed the needed information. Consequently, when the initial contacts or interviews indicated that little could be gained by continued use of the interview method in a particular industry, no further interviews were held. In other industries equally diverse, but where one branch was predominant employment-wise, (as in textiles, food and beverages, and wood) the interviews were devoted to the predominant branches with no attempt to cover the entire industry.

The material derived from the interviews is far from complete and is not comparable industry-by-industry. This interview series reveals not only what information can be gathered, but equally important the difficulty of obtaining certain types of information. These difficulties arose either because certain information does not exist or because of the short time available for the study. Probably the greatest limitation was the use of a method based on interviewing a limited number of key people in a city of this size where the industries are so scattered and the bulk of the economic base is composed of innumerable, small, highly specialized firms.

The observations and opinions expressed throughout this report are those of the persons interviewed.

NOTE: A list of all interviews conducted appears on page 32.

MANUFACTURING
WOMEN'S APPAREL

Dr. Lazare Teper, Director of the Research Department of the International Ladies Garment Workers Union, (which has 190,000 members in New York City and represents about 95% of the city's women's apparel industry) provided the following information:

This industry is located primarily in loft buildings in the area from 32nd to 40th Streets, 5th to 8th Avenues. The newer lofts are found along the Avenues, 7th Avenue in particular, while the older lofts are found on the Streets. Some shops are located in converted stores and tenements. In this industry it is customary to rent space, and the average rent amounts to approximately 8 per cent of the firm's total operating costs. There is great variety in the use of space and in the number of floors used per firm. The industry has no special requirements for power, machinery, etc.

Floor Space Estimates

<u>No. of "basic machines"</u>	<u>No. of employees</u>	<u>Sq. Ft. of factory space including a small office</u>
24	39	3,000
48	72	5,400
72	117	8,400

(Note: The cutting table takes up the same space whether the plant has 24 or 48 machines, but additional cutting space is required beyond 48).

The ILGWU estimates on the basis of the above that an average of approximately 75 square feet is needed per worker. The amount of floor space per employee has probably risen because of better working conditions (such as more aisle space), and because the "sweat shop" is becoming extinct. The Union would venture no estimate on future space requirements, for the size of the industry is closely linked to the national income. At present the industry is expanding, but it has no idea what conditions will be like even next year.

The industry is composed of the following: (1) The manufacturer who decides what to make, manufactures on his premises and has a showroom; (2) the jobber who decides what is to be made and places orders for this manufacturing; (although he does not actually manufacture, he may do some cutting, and he also has a selling function — the jobber resembles the manufacturer except that he does not do his own sewing); (3) the contractor who has no designing, originating or sales function and sews a part of all of the garment for the jobber and/or the manufacturer.

Contracting initially was an extension of the homework system. Since the 1930's, contracting has been limited by legislation and the jobber and manufacturer must designate certain contractors for their own, and distribute their work equitably among them. A large portion of the industry is carried on by contract labor, and it is unlikely that contracting will decline. Contracting makes for great flexibility, for the jobber is freed from the responsibility of factory management and merely puts out bids.

The small shop is the symbol of the industrial organization in this industry. A study made in 1937 revealed that in New York the average shop employed about 22 workers while in other centers average shop employment was: New Jersey 61, Connecticut 84, Pennsylvania 59 and in Ohio and Illinois 50. The shops in the smaller cities were generally larger than those in the metropolitan centers. However, a number of large firms have been established. There are numerous manufacturing concerns which now own and operate more than one factory; there are jobbers who utilize the services of many contractors. Concentration of volume in the hands of the large firms is increasing but it has not affected the industry's highly competitive character. The small firm still competes very effectively and is likely to remain. Furthermore, the industry continues to be seasonal.

The Union feels it essential for the industry to remain not only in Manhattan but in its very center. Some manufacturers have been leaving the city but the ILGWU believes this is largely due to the shortage of centrally located space. Dr. Teper is convinced that the manufacturer who leaves the city because he feels his costs will be lower may have a false idea of the real economics; that the factors cited below may well compensate for higher rentals in the newer loft buildings:

- (a) Shipping costs can be lower in the center of the city because hand trucks are used.
- (b) Skilled labor is more accessible.
- (c) Interdependence — the centrally located shop has ready access to the specialty industries of embroidery, pleating, stitching, buttons, etc. The manufacturer who is not in the central district may have to make long-range commitments on orders for specialty items and so incur higher costs.
- (d) Machine maintenance is cheaper, for a mechanic is on contract; elsewhere a firm might require its own mechanic and a supply of spare parts.
- (e) Insurance rates may be lower in fireproof buildings.

(The Amalgamated Union disagrees with the ILGWU that it is essential for the Women's Apparel industry to stay in Manhattan).

A study in 1934 by the Bureau of Foreign and Domestic Commerce suggested that since the major part of the garment loft is used for receiving, shipping and storing and the smaller part for display and selling, storage could be located in a lower rent area. Dr. Teper, however, disagrees as he does not believe these functions can be advantageously split up.

This industry is burdened by the usual transportation problems affecting industry generally in the city. The Union feels, that inside loading facilities should be required in all new loft buildings especially since sidewalk congestion is acute in the garment district.

MEN'S APPAREL

Mr. Hyman Bookbinder of the Research Department of the Amalgamated Clothing Workers Union, (which has 375,000 members throughout the country of whom 100,000 are in New York City), provided the following information:

The overwhelming bulk of the industry is located in loft buildings, usually of the very old type. In Brooklyn, in addition to locating in old lofts, a variety of remodeled structures (basements, old tenements and stores) are used. A few of the large-scale chains, such as Crawford in Queens, have modern horizontal-type buildings. Although the horizontal factory is best suited to efficient operation in this industry, to date cheap space has been more important. Most of the industry rents, and has no special requirements for power, machinery and the like. If the number of large-scale manufacturers increases (and these will be largely chain companies) this tendency to rent may be offset, for the chains prefer to own their buildings.

The Amalgamated estimates that about 60 to 70 square feet are used per employee and unlike the women's apparel industry the amount of floor space per employee has not risen because the shops are still located in the older lofts and working conditions continue to be inferior. This Union, like the ILGWU, feels no estimate of future space requirements can be ventured because the size of the industry is geared to the national income.

The distribution of shops in the coat and suit branch, the major employer of the industry, is given below:

Contractors in Coat & Suit Branch (First Quarter, 1946)

	<u>Shops</u>	<u>Employees</u>	<u>Payroll for Quarter</u>
Brooklyn	160	9,658	\$ 5,768,000
Manhattan below 23rd Street	127	6,970	4,380,000
Manhattan above 23rd Street	1	135	129,000
Newark	15	883	553,000
Passaic area	26	2,491	1,340,000

(Note: The above does not include manufacturers, large contractors or contractors working exclusively for one manufacturer, nor does it include shops in Queens or the Bronx. Nonetheless the Union feels it is a good guide to the location pattern.)

The industry is composed of many small producers. These are manufacturers who operate either an "inside" or an "outside" shop. The latter are predominant, and under this system the work is given to contractors. The system is very similar to that in women's apparel except that in the men's apparel industry there is no "jobber". If the term "jobber" were used he would be a manufacturer who had less than 10 workers. The average shop in the industry has about 50 workers but there are many smaller ones, and also some very large ones such as Bonds in Rochester which employs about 5,000.

There are many marginal contractors and manufacturers and they seek the cheapest possible space. They go in and out of business but this does not affect their space requirements as they generally retain their quarters though they may dismiss most or all of their labor. The contract system makes it necessary for the garment in its various stages of production to be transported between several shops, thus increasing the traffic congestion. If all of the industry were on an "inside" shop basis congestion would be far less.

The industry is dependent upon immigrant labor in the main and the shops have been fairly close to the workers' homes in Brooklyn and Manhattan. This foreign-born labor might be reluctant to travel to work in outlying areas of Queens and Brooklyn.

Aside from New York, the industry is distributed throughout the country, primarily in Chicago, Philadelphia, the Allentown(Pa.) area, Rochester, Buffalo, the Albany-Troy area, Baltimore and Cleveland. There was a period when manufacturers fled from New York City to avoid unionization and higher wages but this exodus seems to have decreased.

It is not necessary for this industry to be in the center of Manhattan because style is not as significant as in women's apparel. The larger shops do not need ready access to the buyer, so a Queens or Brooklyn location does not constitute a disadvantage. At present, loft space is not available in Manhattan and if a firm wants to remain in the city it must seek space in the other boroughs.

There is an increasing tendency for the industry to have large factories of the chain type, such as Howard, Crawford, Bond, Ripley. In the past decade the output of the retail manufacturing chains was increased from 10 per cent to 25 per cent of the entire industry. As the marginal producer fails it is unlikely that new small units will come in to replace him, and eventually the chains may pick up the business. However, this will be a very gradual process.

The Union could estimate rents only on a pre-war basis, when the rate was approximately \$.50 to \$1.00 per square foot, or even less. Few plants are located in expensive rent areas, and the large plants in particular have located in the cheap areas of Brooklyn and Queens.

The industry suffers from the usual transportation problems generally affecting industry in the city. The loading problem is acute and the contracting system undoubtedly aggravates the congestion.

The Union feels that in the long run the industry must improve its working conditions and locate in better buildings or it may have to leave the city. This is a result of the industry's inability to attract new labor to replace its present aging labor force. It is difficult to get younger labor because too many competing industries in the city have modern plants, and the men's clothing industry still operates under what amounts to sweatshop conditions, "just good enough to get by the factory inspector". The space in square feet is adequate but of very poor quality. The industry needs new attractive buildings where space will be more efficiently utilized. The Union blames the contracting system for the poor factory conditions but has no evidence that the system really is breaking-up. If it were to decline, the larger concerns would be likely to move in and locate their new factory buildings in the less congested areas of the city.

TEXTILES

The Textile Workers Union of America (The TWUA), the source of the following information, is a national union whose membership includes those employed in the manufacturing of cloth, cotton, rayon, wool and synthetic fibers, cording and twine and carpets, as well as in dyeing and finishing. It does not include converting.

The Textile Workers Union of America has a membership of 450,000 to 500,000 members, but New York City has a very small proportion of this.

There is no textile manufacturing of consequence in the city. The manufacturing of knitted outerwear, textile bags (made of burlap, canvas or cotton) and bias-binding, and dyeing and finishing, are the branches of the industry in New York. Knitted outerwear is the predominant branch in terms of employment.

Dyeing and Finishing

In New York City and Paterson, New Jersey, dyeing and finishing is a small shop operation although in the south it is done on a mass production basis. The dyeing and finishing shops in New York are important for very specialized work. This branch of the industry has made some exodus to the south where the mills have constructed their own facilities and can handle the work at lower cost.

Knitted Outerwear

The National Knitted Outerwear Association stated that it covers more than 85 per cent of the knitted outerwear production in the country. Fifty per cent of this production is in New York City. The Association has about 700 members employing about 26,000 persons and of this number about 450 members are in the city and employ between 10,000 and 12,000 persons. Knitted outerwear refers to all clothing which is knitted and excludes hosiery, underwear and gloves. The union for this industry is a local of the ILGWU.

This is a small-man industry and on the average its shops employ less than 50 workers. In New York it is located primarily in lofts but in the rest of the country firms often have their own small factories. Cheap space is essential for this industry.

In the city shops are located in all of the boroughs except Staten Island but the concentration is in Brooklyn. Jobbing (which uses up quite a bit of space because of the storage of stock) and showrooms have to be in Manhattan but the factories need not be centrally located.

The industry requires skilled help and its labor supply in this city has been dwindling. Its employees are either trained on the job or receive preliminary training at the Needle Trades High School or the Strauben Muller Textile High School.

During the years from 1935 to 1938 a number of firms in this industry moved out of New York when the unionization drive was especially active. The firms were drawn to areas throughout the country, particularly where Chambers of Commerce offered "inducements". There does not seem to be any compelling reason to leave the city now and no exodus has been noted. Certainly the shops now unionized will not bother to leave the city to avoid the unions. New York City's attraction for this industry lies in the availability of a more skilled labor force than can be found elsewhere and the existence of a market for the industry's products.

The industry is not experiencing any space shortage now and cannot foretell whether it will need more space in the future. Although the Association could not give an employee-floor space ratio it pointed out that more space was needed per employee than in the apparel industries because of the heavier machinery used.

PRINTING

Commercial Printing

The New York Employing Printers, an organization whose members employ over 70,000 commercial printers in the city, provided the following information:

The major centers of commercial printing are (1) in the East 40's; (2) on the West side around the General Post Office; (3) in the City Hall neighborhood; (4) along Varick Street; and (5) in Long Island City (a small but expanding center).

Commercial printing requires floors which can accommodate a heavy weight load. Small and medium-size plants require 200 lbs. per square foot and large plants require from 250 to 400 lbs. per square foot. Elevators strong enough to bear a minimum of ten ton loads are essential. They must operate 24 hours a day, as multiple shifts are common. Access to railroad sidings is desirable.

This organization had no estimates of employee-square foot ratios but believed that in a small plant with small equipment, 100 square feet per employee might be required. In the medium-size and large plants the ratio would depend upon the size of the machinery in use.

In this industry it is customary to rent space, and leaseholds usually are very long, frequently for 20 years; the minimum lease should run for at least 10 years. Except for certain very specialized printing shops, the maximum rent ranges from 90 cents to \$1.10 a square foot. Printers tend to locate in loft buildings in the centers noted above and usually a number of printers locate in the same building.

There are a number of transportation problems; many of the buildings have no loading facilities, and inside loading facilities should be required in all future buildings. If many of the shops could be located near a railroad siding there would be a definite saving, since trucking for the printing industry is more expensive in New York than elsewhere in the country.

Brooklyn has not been a suitable location for printing. Aside from Manhattan, Queens (especially Long Island City) is preferred, as the industry feels it is easier to get a customer to Queens, and even to Long Island, than to Brooklyn. The Employing Printers would like to see a big printing center in Queens where the rental would not be too high and railroad sidings would be available. The industry does not need one- or two-story buildings but rather multiple-story buildings with about 30,000 to 50,000 square feet per floor. The elevator problem in such a building would be manageable. (The Trinity Corporation properties on lower Varick Street were cited as the buildings in the city which now come closest to providing the necessary floor space and facilities.)

The very large printing shops have left the city, and those shops which remain have tended to become highly specialized: advertising typography, advertising printing, financial and legal printing, general commercial service printing, and small-run publications (weekly and monthly). Chicago, which has many more "horizontal" buildings than New York, has kept its large printing plants.

The larger printing plants have left New York because they could not get sufficient space at a price they could afford, railroad sidings were not accessible, transportation congestion increased their operating costs, and to a lesser extent, the city sales tax put the printers at a competitive disadvantage. These plants have tended to go to smaller cities throughout the country. The Employing Printers stated that with suitable facilities New York would have a good chance to bid once again for the mass production work; that many printers would prefer to locate here if the above disadvantages could be overcome. A specific example of how New York cannot maintain its leadership was given: a "perfect binding device" which has been invented and which the Employing Printers would like to see developed here, to the benefit of both the printers and the city, will have to be developed elsewhere because of the disadvantages cited above. Building costs are now so high that a building originally planned for the industry at 69th Street and 12th Avenue will have to seek other tenants because no printer will be able to afford the rental.

Labor in the printing industry is aging but the industry has a training program which should encourage new blood. Its labor is drawn from all over the city and as employment generally is stable, there is no labor problem. Technological factors are not likely to change the nature of the printing industry in this city.

One problem bothering the New York printers is that a large part of the New York postal zone actually is in the Atlantic Ocean. If the city could be the center of a complete zone rather than a part of a zone, as at present, it would help its competitive position with other cities. This has been a limiting factor on printing certain types of magazines in New York but is a federal rather than a municipal problem.

If the industry maintains its present position the amount of floor space now occupied is adequate.

Newspaper Printing

The Publishers Association of New York* provided the following information:

* This is a voluntary association whose member papers are: the Herald Tribune, Journal American, Mirror, News, New York Times, Post, Sun, World Telegram, Brooklyn Eagle, Journal of Commerce, Wall Street Journal, Brooklyn Citizen, Bronx Home News, the L. I. Daily Press, the L. I. Star Journal, the Jersey Journal, and Il Progresso. The employment of the above papers is 12,000 to 14,000.

Newspapers usually own their buildings and design and provide their own facilities. In New York, the newspapers have tended to concentrate either in midtown (the Times, Herald Tribune, News, Mirror) or downtown (the World Telegram, Post, Wall Street Journal, Journal of Commerce, Il Progresso). Most newspaper buildings have an offstreet loading platform.

Newspapers often use warehouse facilities for storing newsprint, and some papers own their own warehouses. Some newspapers also have branch plants to which the central plant sends a mat for completion. (The News, Mirror, World Telegram and Sun have branch plants; the Times and Herald Tribune do not have branch plants.) Traffic congestion is a serious problem for New York's newspapers both when the raw materials are shipped in and the finished product is sent out.

Book Printing

According to the Book Manufacturers Institute the printing of hard-bound books in New York City is negligible. Approximately 5,000 are employed in New York and possibly another 2,000 in Garden City.

The Institute felt that the trend in book manufacturing was away from the metropolitan areas and toward the rural areas. The heavy machinery used necessitates horizontal structures. It doubted that book manufacturers could be tempted to return to the city even if appropriate facilities were offered. The trucking problem is too great an obstacle and this branch of the industry has no particular reason to be in New York because its market is distributed throughout the country.

FOOD AND BEVERAGES

The Grocery Manufacturers Association of America, Inc., was consulted in an attempt to determine the key sources for information about the industry. This Association, a national organization representing primarily the major companies (such as Heinz, Proctor and Gamble), knew very little about the local food industry.

According to the Association most food manufacturing plants are located out of New York City in order to get more room, as the factories are usually horizontal and need considerable cheap space. The food plants generally found in this city have low area requirements and such local companies as Tetley Tea, Guldens Mustard and Lea and Perrins were cited. These are small space users when contrasted with manufacturers of soap, coffee, cereal, etc. Breweries are also local because freight rates are high for bottled goods, but are only a small percentage of the total cost for most food products.

The food industry maintains office space in New York and the Association estimated that at least 500 companies including food brokers (that is, manufacturers of their representatives but not chains or wholesalers) maintained office space in the city. Such office space seems to be cramped at present.

Bakeries

The Bakers Weekly, a magazine, was consulted as the only possible central source of information on baking in the city. As it is a national magazine, its information about local conditions was very limited but its representatives did not know of a better source. This trade magazine divides the industry into the following categories:

1. National group companies: Continental (Hostess Cake, Wonder Bread); General (Bond); Purity (Taystee, Cushman); and Ward.
2. Chain grocery bakers: A & P, Bohack, First National, Safeway. (These bakers control their own outlets and so effect a tremendous savings in distribution.)
3. The smaller wholesale groups: Gordons.
4. The specialty outfits: Wagners, Drakes.
5. The large independents which sell either wholesale or on a house-to-house basis: Dugan, Krug.
6. The restaurant bakers: Horn and Hardart, Childs.
7. The multiple unit retailers: Ebinger, Hanscom. (These retailers bake in a separate plant but operate their own retail outlets.)
8. The smaller wholesale bakers.
9. The neighborhood bakeries.

Usually bakeries are in two or three-story buildings. It is essential that their delivery facilities be efficient since freshness of product is so important. The factories generally are specially designed and are owner-occupied.

Of the many bakeries in New York City about 180 do over \$75,000 business in a year, and such plants employ at least 10 workers. Of these, about 50 do over \$500,000 business a year and their employment per plant can be very sizable.

The magazine had no information about floor space and could only give a financial breakdown of investment for a bakery which did \$500,000 business a year:

Land cost	\$ 12,500
Building cost	100,000
Equipment	100,000
Delivery equipment	25,000
Miscellaneous plant investment	<u>12,500</u>
Total	<u>\$250,000</u>

(The above refers in the main to a bread bakery which might be located in any part of the country.)

The baking industry usually grows with the population of its local area. However, due to an increase in the per capita consumption of baked goods the industry has grown more rapidly than the population in recent years. In New York the baking industry will be more likely to expand in an area where population increase will be largest, as in Queens.

Biscuits and Crackers

The Bakers Weekly provided the following information:

In New York there are a limited number of large biscuit and cracker manufacturers; Brooklyn (7), Queens (2), and Manhattan (2). These include Drake, Sunshine, National, Independent Biscuit Manufacturers Co., Empire Biscuit, and L. M. Peterson.

In this branch of the industry the firms are very large because the machinery required is so heavy that a large trade is necessary to stay in business. A small firm would have a very small chance of success.

CHEMICALS

The secretary of the Drug, Chemical and Allied Trades Section of the New York Board of Trade could provide only the most general information about the chemical industries of the city. A classified list of the subdivisions of this Section of the Board indicates the difficulty of attempting to interview a few key sources: Agents, Brokers and Distributors; Botanicals and Crude Drugs; Chemicals and Solvents; Containers and Closures; Cosmetics; Essential Oils, Perfumers' Raw Materials and Flavoring Extracts; Foods and Beverages; Insecticides; Pharmaceuticals and Proprietaries; Retail and Chain Drug Stores; Sundries; Surgical Supplies and Equipment; Vegetable and Petroleum Products and Vitamin Oils; Wholesale Druggists; and Miscellaneous. This is further complicated because even if one were able to contact a considerable number of organizations they are national in the main and would know little about the local situation.

General information about the chemical industries of New York City: Few of the major chemical companies manufacture within the city but most of these companies need New York offices for sales, packing, wholesaling, importing and exporting, and to a lesser extent, research. There appears to be no locational reason for chemicals to be manufactured in New York City as against other areas -- rather the contrary. The city presents certain disadvantages for this industry: lack of space for horizontal factories, traffic and transportation congestion (particularly severe as the industry receives much of its raw materials in bulk form), and high-priced labor. There has been a tendency for the industry to move out of the city because of the above disadvantages, though the plants may still remain in the Region, usually in New Jersey and Connecticut.

In Manhattan the industry is concentrated in the Hudson-Varick-Canal Street area where there are some plants and wholesale houses. Formerly the John-Beekman Street area was the concentration point.

The chemicals industry in the downtown section was gradually displaced by the expanding insurance industry and the Drug and Chemicals Club in the insurance district still retains its old name though now patronized largely by insurance personnel. Much of the chemicals manufacturing in the city is carried on in Brooklyn (Squibb, Pfizer and Novocal are the big companies) and there is some manufacturing in Queens. Although the large producers are the most important in terms of the total volume of business, there is a considerable number of small manufacturers.

Paint, Varnish and Lacquer

The trade association consulted for this branch of the industry has about 500 member firms in the New York Region and 1,800 throughout the country. This branch of the industry probably has 3,000 workers in New York City though the Association had no figures on either employment or number of establishments. It is a process industry and uses a small number of employees in proportion to the dollar volume of business.

The plants are located in all the boroughs, with Brooklyn probably having the greatest number, Queens and the Bronx running equal seconds, followed by Staten Island and Manhattan. The majority of firms own their own buildings and have multiple-story factories. There has been some migration from the five boroughs to New Jersey and Connecticut; the Association considered the "tax burden" an important factor, as well as the transportation congestion and the problem of strikes (tugboat and trucking particularly); it claimed that labor was difficult to obtain, preferring to work in offices and retail stores rather than in factories. The Association has instituted a comprehensive training program in the city. The industry draws its labor from all over the city and of the plants in the New York area, somewhat more of them are located out of the five boroughs than within the city proper.

Cosmetics

The trade association for this branch (which includes toothpaste and powder) indicated that it employed 7,000 to 8,000 workers in the city. The space requirements are small in proportion to the dollar sales volume. The industry would rather rent space, and is located mainly in loft buildings. One-story operation is preferred and some of the manufacturers (e.g. Hudnut) would like to move out for this reason and also because of the serious trucking problem. New York, Los Angeles and Chicago provide 85 per cent of the total dollar sales for the industry and New York alone provides 50 per cent.

No further interviews were conducted in the chemicals industries because of the unsatisfactory results yielded by the above interviews and the difficulty of contacting a few representative sources who could answer our questions.

PLASTICS

The Society of the Plastics Industry, Inc. (the SPI), the trade association of the industry whose 600 member companies and 900 individual members represent every branch of the plastics field, provided the following information:

Branches of the Industry

1. The material manufacturers — a few large companies make the synthetic resins, basic raw materials for the industry. These companies, which are typical chemical plants, have horizontal factories and usually are located in outlying districts. Some of the major material manufacturers are du Pont, Monsanto, Dow, American Cyanamid, Bakelite, Ciba and the Barrett Division of Allied Chemical & Dye Corporation. Although many of these material manufacturers have their head offices in New York their manufacturing is not carried on in the city. In the New York area there are a number of these plants in New Jersey; Bakelite in Bound Brook and Bloomfield, Celanese in Newark, American Cyanamid in Bound Brook, du Pont in Arlington, Goring Products in Kenilworth.

2. Molders and Fabricators — this is the largest group in the industry and the number of employees per firm varies from very small to very large. During the war this branch expanded greatly and many of the entrepreneurs who entered the industry then or in the postwar boom (such as veterans on government loans) have "lost their shirt". Their fallacy was in thinking that anyone could set up and make his fortune. This has brought about a large mortality but by now most of the marginal producers have been liquidated.

The fabricators — the equipment needed for a fabricating firm is not very sizable and resembles that in a woodworking shop (sanders, belt saws, hot plates). Such firms can be fitted into ordinary loft space and the space requirement is small. Of all the plastics firms in New York fabricators have been most numerous. The products usually are consumer goods such as buttons, dresser sets, and the like.

The molders — the equipment required is more sizable and in many ways resembles that in a printing plant. Heavy presses are used, making weight bearing floors essential. In a city such as New York, molders often set up on the ground floor of a loft. These firms can operate either a horizontal or a vertical shop, and the space requirement is small. In molding, the product is usually only a part of an entire product and is therefore not a consumer goods. Molding derives no particular benefit from locating in New York since it does not depend on the market, and though such firms often set up in an industrial area they are not found particularly in metropolitan centers.

3. The laminators — large plants in which sheets of cloth or paper are impregnated with a resin. Few laminating plants are found in New York.

4. Fringe industries — equipment suppliers who manufacture the necessary machinery and equipment. These firms may also manufacture machinery for other industries.

(Plywood manufacturers are customers of the plastics industry and do not constitute a branch though plywood is considered by some a border-line plastics product in that synthetic resins may be used in its manufacture. The Plastics Society had no information on plywood manufacturing.)

Present Status of the Industry

At its wartime peak, the plastics industry employed about 100,000, and its current employment is probably around 80,000. The SPI feels that the industry is much healthier since the more unstable entrepreneurs have been weeded out and the products are beginning to stand up in their own right rather than just as substitutes. At present there may be a surfeit of certain plastic products, such as shower curtains and kitchen equipment, but in time this will be adjusted. It is very difficult to know what the industry's future will be. The SPI has no statistics on the plastics industry in New York City but felt that since plastics is a comparatively small employer nationally and has been of little consequence in New York thus far, there is no reason for New York to become a plastics center in the future.

METALS AND METAL PRODUCTS

Metals and Metal Products is an extremely broad classification covering iron and steel and their products, non-ferrous metals and their products, electrical machinery, machinery except electrical, professional and scientific instruments, and jewelry.

The AFL union representative on our Economic Statistics Advisory Committee, who is also secretary-treasurer of the International Association of Sheet Metal Workers, was consulted but knew of no central source of information. After numerous fruitless telephone calls it was decided that in the short time available for interviewing too little could be learned about this industry to be of value.

WOOD AND WOOD PRODUCTS

This is a comparatively small industry and its employment is scattered among the manufacturing of furniture, wooden containers, screens, shades, venetian blinds, morticians goods and miscellaneous wood products. As the furniture branch is the only one with a sizable employment it was singled out for interview.

The Superintendent of the Furniture Exchange of this city was consulted with disappointing results. In order to obtain information just for this one branch of the wood and wood products industry it would be necessary to consult a number of separate trade associations, e. g., the framemakers association, the upholsterers association, etc.

The following was the only information obtained: there appear to be no large producers of wood furniture in the city but a number of small cabinet shops. Bedding and upholstered furniture are the only branches of the furniture industry which have been attracted to New York. The remainder of the industry feels that labor costs are too high and that the space available for manufacturing is insufficient as production is of a horizontal nature. The major furniture centers are found in: Jamestown, New York; Gardner, Massachusetts; ~~New York City~~; Pennsylvania; Grand Rapids, Michigan; Rockford, Illinois; Evansville, Indiana; Vermont and North Carolina; and on the West Coast.

NON-MANUFACTURING

BANKING

There is no way of anticipating the future of branch banking. The State Department of Banking cannot forecast because it must wait for the application for a branch to be submitted, nor does the Federal Reserve Board have any prior information. Certain changes however have become evident in the banking structure: there has been a large increase in the number of branch banks in the city and a decrease in the number of independent banks; there has been the addition of banks like the Morris Plan chain and Macy's Bank and a decrease in the number of branches of foreign banks.

Wherever there is a new settlement there is usually an influx of branch banks (e.g., the increase in banks in the Cooper-Stuyvesant area). However, the State Banking Department does not allow a branch to be opened merely because a bank decides it wants to locate in a certain area and feels it can make it pay. The Department is out to see that public convenience and facility are served and does not want to encourage what it considers unhealthy competition. Consequently not all applications for new branches are approved.

Since the war there has been a fair increase in new branch facilities and it has become difficult to find a good branch location since most have already been occupied. However, a bank needs new space only when it locates in a new or redeveloped neighborhood. Otherwise, conversion can solve its problem; (e.g., a retail store can be readily converted into a branch bank by digging a vault below and conversely a bank may be converted to another use as was the bank on Liberty Street which was taken over by Wanamakers). When a bank loses one branch and opens another this should be considered a change in location.

Neither of the authorities interviewed knew how we could calculate the existing floor space now used by banking or how much space banking would require in the future. It was pointed out that the space used for banking is inconsequential and there is no more reason to be concerned about it than, for example, the space used by funeral parlors.

The State Banking Department issues a yearly report which contains information about all the branches and banking stations of state banks authorized for the year (but not already built), and the specific location. Also indicated are those banks which have been authorized to discontinue during the year. The latest report of the State Banking Department includes a table which indicates the number of principal banking and lending facilities of New York State for 1948 with a breakdown of the state and federal banks. This information was not provided in previous reports. However, Polk's Bankers Encyclopedia (a semi-annual volume) does state the number of banks in the city at any particular time period.

LIFE INSURANCE

The organizations consulted indicated that the volume of life insurance written has increased and that this upward trend will continue. The nation's rising population curve, the new types of insurance offered (such as the children's endowment policy) and more complete policy coverage than formerly, are the reasons given. According to the Life Insurance Association, employment in the industry is now one-fourth greater than prior to the war and figures for the postwar years are given below:

TOTAL FULL-TIME EMPLOYMENT IN THE U. S. LIFE INSURANCE INDUSTRY

	1946	-	1948	
	<u>1/46</u>		<u>1/47</u>	<u>1/48</u>
Home Office	80,500		94,400	101,400
Agency Cashiers & Clerks	30,000		32,000	34,500
Agents & Agency Managers	150,700		170,500	178,500
	261,200		297,700	314,400

(Source: Life Insurance News Data, The Institute of Life Insurance, April 28, 1948)

As no information was available for the local life insurance industry the Armstrong and Hoyt figures of home office employment of the four largest companies in New York were brought up to date:

HOME OFFICE EMPLOYMENT OF THE FOUR LARGEST LIFE INSURANCE COMPANIES IN MANHATTAN

	<u>Company A</u>	<u>Company B</u>	<u>Company C</u>	<u>Company D</u>	<u>Total</u>
1925					15,396
1926					16,449
1927					17,281
1928					17,841
1929					18,805
1930					19,904
1931					21,111
1932					21,963
1933					22,169
1934					22,632
1935					22,583
1936					22,188
1937					22,466
1938					22,774
1939					23,227

(Cont. on next page)

HOME OFFICE EMPLOYMENT OF THE FOUR LARGEST
LIFE INSURANCE COMPANIES IN MANHATTAN (Cont.)

	<u>Company A</u>	<u>Company B</u>	<u>Company C</u>	<u>Company D</u>	<u>Total</u>
1940	13,200	4,129	4,420	2,011	23,760
1941	13,400	4,147	4,277	2,053	23,877
1942	12,500	3,897	3,859	2,077	22,333
1943	11,300	3,766	3,357	1,863	20,286
1944	10,400	3,725	3,045	1,800	18,970
1945	10,500	4,056	3,075	1,912	19,543
1946	12,200	4,484	3,266	1,901	21,851
1947	12,900	4,750	3,558	1,890	23,098
1948	13,000	4,811	3,638	1,856	23,305

(Source: 1925-39 totals were taken from Armstrong and Hoyt, Decentralization in New York City, 1941. 1940-48 figures were obtained by a personal request from the 4 major life insurance companies in the city.)

INSURANCE OTHER THAN LIFE

Casualty and Surety Companies

We consulted the Association of Casualty and Surety Companies, a trade association of stock companies whose members write more than 50 per cent of the casualty and surety business throughout the nation.

The Association believes that probably all major companies writing a number of lines of casualty and surety insurance and doing a nation-wide business have a New York location. It estimates that New York writes at least one-third of all the insurance in these lines. The other important centers are Hartford, Baltimore and Philadelphia.

In New York these companies are concentrated in the Maiden Lane-William-John Street area, formerly the drug and chemicals section. Most of the companies which own their buildings are trying to evict tenants so that they can use the space. This branch of the industry had sufficient space before the war but is now very crowded because of the increased volume of business. Although there is very little room for expansion in the present insurance district, the Association knows of no decision to move either out of the present area or out of the city.

Fire and Marine Insurance

Hartford was the original center for fire insurance but New York superseded it and the National Board of Fire Underwriters estimates that 50 to 60 per cent of the fire insurance business of the country is now located in New York City. The two largest fire insurance companies, the Home Insurance Company and the Continental, are located in this city.

The fire insurance companies in New York are located in the same area as the casualty and surety companies, and also usually own their own building. They are crowded for space and feel very confined in the insurance district. There has not been an important move of the fire insurance company away from New York and the Board does not anticipate any in the future. The cluster of brokers and service organizations makes it difficult to uproot insurance from its present location.

The volume of fire insurance has been increasing and the industry recently has had almost more business than it could handle. Business has also increased because there has been a tendency to expand policy coverage. Formerly such insurance was generally confined to loss against fire, lightning and kindred perils. It has now been extended to include wind and storm, tornado, rain and hail, sprinkler leakage, personal property and inland marine (transportation).

The Board and the Association both pointed out that the distinction between fire and casualty insurance was becoming increasingly blurred and in the future all risk insurance may be written by the same company. This is called multiple line insurance and is now under consideration by the New York State Legislature. No one as yet knows what the outcome will be, or what effects it will have on the future of both branches of the industry should this merger occur.

Neither the Board nor the Association knew very much about the marine insurance industry in this city except to note that New York probably has the greatest concentration of marine insurance in the country due to the harbor. Marine insurance is likely to remain downtown to be within easy reach of the harbor and its service organizations.

ADVERTISING

The American Association of Advertising Agencies (known as the 4 A's) estimates that the combined employment of its members in New York City is 10,000. The Association represents the larger agencies but does not include the "one-man agencies". If the latter are included there are probably 14,000-15,000 employed in the city's advertising agencies. This does not include those employed in an advertising capacity by radio stations, newspapers, the larger stores, etc., and the Association did not know how this employment could be calculated.

Employment in advertising has risen steadily and the Association believes that this trend will continue until 20,000 are employed by all the advertising agencies of the city.

The 4 A's, which is located at 420 Lexington Avenue, (the Graybar Building), is in the geographical center of the "advertising district". Within a quarter mile of the Graybar Building are concentrated 90 per cent of the city's advertising agencies. Many of these agencies are located in the Graybar, Chanin and Chrysler Buildings. Advertising has had this location for more than 20 years, and the only moves away have been either to Radio City or a little further uptown. The 4 A's believes advertising will continue in its present location.

The agencies have a severe space problem. The major effect has been to scatter the space of an agency either on different floors of the same building or occasionally in different buildings. This problem would be substantially solved if each agency could consolidate its present space.

Using the floor space-employee ratio of its own office (which it considered representative of an average advertising agency) the 4 A's' figure was 125 square feet per employee. This includes space for reception rooms, corridors, rest rooms, executive offices as well as the regular work space.

THE LEGITIMATE THEATER

There are 34 legitimate theaters* in New York City. New York has had as many as 70 theaters in the past but since 1925 that number has declined and none have been built in about 25 years. Many of these theaters were converted to cinemas, a few to radio, and more recently, television. The International Theater is a current example of the last, having just been taken over by NBC Television. Television may absorb a few more legitimate theaters in the future. The League of New York Theaters expects the present number of theaters to remain constant and feels the city now has as many theaters as it requires.

The League passed along a rumor that the City Investment Company might raze the theaters in the vicinity of 45th-46th Street west of Broadway and the theaters that would be affected are the Bijou, Morosco, Fulton and the 46th Street.

Actors Equity keeps no figures on the employment of its members but estimated that it had an active membership of approximately 6,000. However, this membership is constantly fluctuating so this may not be a representative figure. Equity did not feel the theater was any worse off now than it has been in the past and denied it was in a depressed state.

<u>*Shubert</u>	<u>City Playhouses</u>	<u>Other</u>
Adelphi	Coronet	Alvin
Barrymore	Fulton	Beck
Belasco	Morosco	Biltmore
Booth	46th Street	Empire
Broadhurst		Music Box
Broadway		Hudson
Century		Lyceum
Cort		Mark Hellinger
Golden		Miller
Imperial		Ziegfeld
Majestic		48th Street
National		Mansfield
Plymouth		International
Royale		
Shubert		
St. James		
Winter Garden		

RADIO AND TELEVISION

The Engineering Department of the National Broadcasting Company provided the following information:

Radio and Television Studios in New York City

Major radio studios in N. Y. C.

NBC
CBS
ABC
WOR (Mutual)

Television studios in the N. Y. area

NBC
CBS
ABC
WOR*
Dumont*
PIX (News)*
WATV **

There are about 1,800 NBC employees, with 1,500 of these in radio and the remainder in television. This figure excludes artists, musicians and performers because they are not employed regularly. If included, approximately 3,000 would be added to the employment figure. NBC guessed that there are from 8,000 to 9,000 employees in radio and television in NYC and another 15,000 if artists, musicians and performers are included.

In this city radio studios are located either in office or loft buildings. With the exception of NBC and CBS, which had their studios designed especially for them, all studios have had to adapt their space in ordinary office buildings.

NBC now has about 500,000 square feet of studio space in Radio City Center and another 50,000 square feet at RKO Pathe (106th Street and Park Ave.). It also has the International Theater (58th Street and Park Avenue) which can seat about 1,100 people. NBC had no idea how much square feet the other studios occupy.

Transmitting Locations

RADIO

NBC Port Washington (30 acres)
CBS Little Pea Island, near Larchmont
ABC Lodi, N. J.
WOR Jersey Meadows
A number of the smaller stations have their transmitters in the New Jersey meadows.

TELEVISION

NBC Empire State Building (4,000 sq. ft. and roof rights)
CBS Chrysler Building
ABC Pierre
Dumont Bldg. at 54th St. & Madison Ave.
PIX News Building
WOR in nearby New Jersey

* Smaller television studios

** A station in New Jersey; probably will remain there.

As the above table reveals, radio transmitting is best located outside the city and needs some acreage, while television transmission is best located within the city, takes little space but needs height. The space requirements for sound and television transmission probably will remain constant.

Television uses considerably more staff per program than radio (for example, whereas radio uses 2 employees for a regular show, television requires 15, not counting performers). NBC believes that television will continue to expand and within three years will exceed radio in employment. The unanswerable question is whether the radio industry will hold its own or decline. It is NBC's guess that in the long run radio probably will decline.

Television not only requires more employees for an equivalent program than radio but also needs much more space. At present it is being accommodated in converted radio studios and a few theaters such as the International. However, it is most desirable to have television located in horizontal structures providing ample space for sets and workshops, similar to the studio buildings in Hollywood.

About two years ago the television industry inquired of Commissioner Moses whether it could acquire some land at the World's Fair site. Commissioner Moses, although declaring the plan unfeasible, offered the industry some land at the Pomonok Club in Flushing, a little past the Fair Grounds. The Commissioner initiated a scheme whereby all the television companies in the city could be located in the same area. He suggested that a holding company be formed to purchase this property. One hundred and thirty acres were available and the division of the land was to be 30 acres each for the three largest television companies and 15 acres each for the three smaller companies. (Due to FCC restrictions no other companies are anticipated for New York.) The plan fell through because of the considerable initial outlay required. Television at present is not paying its own way and the smaller companies did not feel they could afford to purchase this property now.

NBC considered the scheme sound and regretted that it did not work out. It now fears the television companies may move to different parts of the New York area and the advantages of a coordinated location for all the companies will be lost. NBC is still looking for property and is willing to leave Manhattan despite the disadvantages of being separated from its present studios and the central amusement district. If a television site were acquired outside of Manhattan, NBC would still retain television studios in Radio City for major performances. However, some of the space now used in Manhattan might eventually be reduced.

As far as NBC knows no company has yet made a commitment for property, but it feels the major companies may take options in the near future. Queens, Long Island and Westchester are considered possible locations. NBC believes it still is not too late for the companies to band together as originally planned to purchase a joint 130 acre site. However, the Pomonok site is no longer as desirable, for some of the land has been sold.

If and when NBC moves its television studios out of Manhattan, it would plan to run its own transportation service between Radio City and the new location similar to the bus service which it now runs to the RKO Pathe Building at Park Avenue and 106th Street. The other companies probably would provide similar transportation service using the airline shuttle type of buses which now go out to LaGuardia.

NBC is of the opinion that New York and Hollywood will always remain the major origination points for radio and television as these cities have the greatest concentration of performers and facilities.

There are three sources of television programming:

1. Live talent in a studio
2. Outside pickup (sports, etc.)
3. Film - using both 35 mm and 16 mm

The same studios can not be used for film as for live talent because of the high inflammability of film and the stringent building code regulations.

MANAGEMENT

The Herald Tribune was consulted, but the information provided about New York as a management center was sketchier than expected.

According to the Herald Tribune's Continuing Home Study for 1947, 46 per cent of the working population was considered to be in a managerial, professional or related activity as against one-third of the population for the country as a whole. In managerial, professional and related activity the newspaper included proprietors, managers and officials, sales and kindred workers, clerical and kindred workers, and semi-professional workers. Using this same blanket definition it estimated that 89 per cent of its newspaper audience was in managerial and related functions.

The Tribune is at present making a study of the 100 largest companies in America on the basis of their 1947 sales volume. It has found that 43 of these companies have their head offices in the New York area and have a combined sales volume of \$26,000,000,000. The 57 other largest companies were scattered throughout the country. The list of the 100 companies was furnished by the National City Bank. A study is also being made of the amount of office space occupied in certain key office building districts of the city.

WAREHOUSING

The president and vice president of the Manhattan Storage and Warehouse Company provided the following information.

Warehousing falls into these categories:

1. Household storage
2. Public merchandise warehousing
3. Cold storage
4. Company owned warehouses (food chains, department stores, certain manufacturers, etc.)
5. Loft storage (wholesalers who might store in their own lofts, or rent loft space for storage)

(It is also important to note, but difficult to obtain information about the out-of-town manufacturer who uses storage space in the city in order to make quick deliveries to local consumers. This use of warehouse space has been increasing.)

Information on the floor space occupied by public merchandise warehouses is available below, and probably can be had for previous years:

PUBLIC WAREHOUSING OF GENERAL MERCHANDISE

<u>Geographic Div.</u>	<u>Firms Reporting</u>	<u>Buildings Reported</u>	<u>Floor Space</u>		<u>% Occupancy</u>	
			<u>Thousands of Sq. Ft. Occupiable</u>	<u>Occupied</u>	<u>6/48</u>	<u>6/47</u>
U. S.	558	1,865	44,825	39,268	87.6	89.1
N. Y. Metro. District	52	554	10,502	8,580	81.7	87.5
Bklyn. & Manhattan	38	520	7,646	6,109	79.9	86.1
Nearby N. J., all others	14	34	2,856	2,471	86.5	91.5

(Source: U. S. Department of Commerce, Space & Occupancy Information)

NUMBER AND FLOOR AREA OF WAREHOUSES IN THE BOROUGHES OF
NEW YORK CITY AND IN CERTAIN NEW JERSEY CITIES, IN 1918

	Cold Storage		Food Storage (except cold)		General Merchandise		Total	
	No.	Fl. Area Sq. Foot	No.	Fl. Area Sq. Foot	No.	Fl. Area Sq. Foot	No.	Fl. Area Sq. Foot
Manhattan	18	1,492,075	32	720,881	205	7,971,979	255	10,181,935
Brooklyn	11	380,000	28	1,234,838	295	9,342,874	334	10,957,712
Bronx	1	171,434	-	-	2	28,500	3	199,934
Queens	-	-	-	-	7	182,000	7	182,000
Staten Island	-	-	-	-	52	1,130,778	52	1,130,778
TOTAL, N.Y.C.	<u>30</u>	<u>2,043,509</u>	<u>60</u>	<u>1,955,719</u>	<u>561</u>	<u>18,656,131</u>	<u>651</u>	<u>22,652,359</u>
Newark	2	86,884	-	-	16	791,395	18	878,279
Jersey City	11	906,700	1	129,352	3	90,000	15	1,126,052
Hoboken	-	-	-	-	2	220,000	2	220,000
Passaic	-	-	-	-	1	10,800	1	10,800
Harrison	-	-	-	-	1	15,000	1	15,000
TOTAL, N.J.	<u>13</u>	<u>993,584</u>	<u>1</u>	<u>129,352</u>	<u>23</u>	<u>1,127,195</u>	<u>37</u>	<u>2,250,131</u>

Source: Joint Report, New York, New Jersey Port and Harbor Development Commission.
Reprinted in Monograph No. 11, the Regional Plan Association, 1925.

The officials of the Manhattan Warehouse Company estimated that about 6,000,000 square feet are used in New York City for household storage with Manhattan using 3,000,000 of this. This space is more than will ever be needed and probably less will be used in the future. The Company has a map showing the location of all the household storage companies in Manhattan. Figures on company-owned warehouses will be the most difficult to obtain and the Manhattan Warehouse Company had no idea how we might get this information.

The above table was based on a questionnaire circulated in 1918. The officials of the Manhattan Warehouse believe that these warehouse figures of 1918 have altered very little. They did not know of any new warehouse which had been built in the city since 1929 and thought that very few warehouses had been built in the period 1918 to 1929. (The Chamber of Commerce of the Borough of Brooklyn confirmed this belief that warehouse facilities have remained constant.) Warehouse facilities in nearby New Jersey have increased since 1918 but those consulted did not know to what extent.

The warehousing function may be declining because in today's business operations there is a quicker turnover of stock than formerly, and less need for storage space. Rail and water transportation is no longer as important to warehousing as formerly while trucking has become more important. The public merchandise warehouses and cold storage companies are generally located along the water front while household storage space is scattered throughout the city. Company-owned warehouses usually are located on cheap land on the periphery of the city.

The warehousing industry is not run "scientifically". A warehouse company rarely is able to estimate how much it costs per square foot or per cubic foot to run its business. Consequently, statistical information is particularly difficult to obtain about this industry.

ORGANIZATIONS

The Commerce and Industry Association

The Industrial Development Bureau of the Association had little information to contribute. It felt that industry was leaving the city because of lack of space, but there was no reason to assume there has been a migration because of other factors. The Bureau indicated that if there had been a mass migration, it would be revealed in empty loft and factory space.

It did not believe it was possible to predict what would happen to industry in the next two decades. "The most one can do is observe how factory space has been used in the past and then reserve some land for industry on the basis of past use." "New York's seemingly high tax rate is largely illusory because the tax is collected in a lump sum and not scattered over several different taxes as in some other cities."

The Bureau makes surveys from time to time but these have little value for our work as they are concerned with facilities available for subcontracting, idle machinery, and the like.

The Chamber of Commerce, Borough of Brooklyn

The Chamber could provide only limited information.

Most of the industry in Brooklyn is small and diverse. There are comparatively few large companies: A. Schraeder and Son (valves for automobile tires), Novocal, Pfizer, and Squibb (chemicals), Trommers, Liebmann and Piel (brewers), Rockwood Chocolate, American Machinery and Foundry Co., and the American Type Founders Company. The Navy Yard is the largest industry in the borough, employing about 20,000 now and during the peak war year, 75,000.

The Newtown Creek and Gowanus Canal industrial sections are completely developed and have no room for more industry. (The Newtown Creek handles more traffic than the Mississippi River.) Gowanus is handicapped by the problem of maintaining water in the Canal at a sufficient depth.

The Chamber has not noticed any tendency for industry to leave the borough or for new industry to enter. Factory space is difficult to obtain but now seems somewhat more available.

Brooklyn has a number of industrial buildings: the Bush Terminal, the New York Dock Company building on Jeraleston Street, and the Robert Gair buildings near the Manhattan Bridge.

When the Brooklyn-Battery Tunnel is completed and more trolleys are replaced by buses, the congestion in the borough's industrial areas will be lessened.

Appraisal Section, Equitable Life Assurance Society

Mr. John O'Conner is the Equitable Appraiser for Manhattan and the Bronx.

Mr. O'Conner feels that most industry is interested primarily in locating in a horizontal structure, and that once building begins the decentralization from New York City will become sizable. Before 1941 there were a large number of vacancies in Manhattan (e.g., the lofts in the textile and machine districts) and only the war temporarily stopped the exodus from the city.

There is still some vacant land in Manhattan for industrial building, mainly on the west side and in very small, scattered tracts. The Bronx has much vacant land which would be excellent for industry if transit and transportation could be extended. Mr. O'Conner feels the area should be developed because it has a good supply of water and labor and the congestion is less than in Manhattan.

The built-up industrial areas of the Bronx have many horizontal buildings. These areas exist on the periphery of the borough: along the Harlem River, along the New York, New Haven freight yards and in the East Bronx around 132nd Street.

REALTORS

Spear and Company

Spear and Company is one of the major real estate organizations in the city dealing with commercial property (lofts and office buildings). Its territory runs from Canal to 59th Street, river to river.

Mr. Spear felt that the city does not have proper industrial facilities, and stressed the need for buildings with larger floor areas and better freight and loading services. Sidewalks should be larger. Buildings with small areas cannot weather a depression; a unit must have at least 10,000 to 20,000 square feet of manufacturing area per floor. No more high buildings should be constructed. The city can use considerably more manufacturing space, especially in industrial buildings like Bush Terminal and Starrett Lehigh and tenants should sign 20 year leases at the outset. (However, Mr. Spear did not know how such ventures could be financed.) He feels that if tenants could get all their manufacturing on one floor, the savings in production costs would compensate for the increased rent in a new industrial building, especially since "rent is a very small part of total manufacturing costs".

It is more economical to use the ground floors of buildings for parking and loading, than for stores which can locate elsewhere. Mr. Spear suggests that the city should force the department stores to use their basements for parking instead of for bargain sales.

INDUSTRIAL LOCATION CONSULTANTS

Lockwood Greene is a well known industrial engineering firm and the representative of this organization whom we consulted, Mr. Charles Wood, is a recognized authority in the field of industrial location. He was unable to provide any estimates on employee-floor space relationships in the different industries as Lockwood Greene attacks each industrial layout job individually and its work is too specific for general application.

Mr. Wood stressed the importance of New York's "incubator function" and how useful the old loft buildings were in this connection. He was a proponent of industrial buildings such as the Port of New York Authority, Starrett Lehigh and Bush Terminal but indicated it was important to check on how well such undertakings could weather depression periods.

A Factory Locating Service was consulted which has been in business for more than 20 years and makes industrial location surveys. It was unable to provide information as it does not deal within the city and is primarily interested in decentralizing industry throughout the country. It could not give any estimates on employee-floor space relationships.

RECORD OF INTERVIEWS

MANUFACTURING

Women's Apparel

Dr. Lazare Teper, Director of Research
The International Ladies Garment Workers
Union

Men's Apparel

Mr. Hyman Bookbinder, Research Department,
Mr. L. M. Rochofsky,
Amalgamated Clothing Workers of America

Textiles

Mr. Sol Barkin, Director of Research
Mr. George Perkel, Research Department,
Textile Workers Union of America

Mr. Sidney Korzenik, Executive Director,
National Knitted Outerwear Association

Printing and Publishing

Mr. Don Taylor
New York Employing Printers

Mr. William Mapel, Vice Chairman
Publishers Association of New York

Mr. Ray Tiffany,
Book Manufacturers Institute

Food and Beverages

Mr. Paul Willis, President,
Grocery Manufacturers of America, Inc.

Mr. A. T. Joyce
Mr. Peter Pirrie,
The Bakers Weekly, (magazine)

Chemicals

Miss Helen Booth, Secretary to the Drug,
Chemical & Allied Trade Section,
The New York Board of Trade

Mr. Warner Hayes, Executive Director,
N. Y. Paint, Varnish and Lacquer Association

Mr. Steve Mayhem,
Toilet Goods Association

Plastics

Mr. Langdon P. Williams, Dir. of Public Relations,
Mr. Jack Weatherbee, Business Manager,
Society of the Plastics Industry, Inc.

Metals & Metal Products

Mr. Moe Rosen, Secretary-Treasurer,
International Association of Sheet Metal Workers

Wood and Wood Products

Mr. Jack Melnick, Building Director,
The Furniture Exchange

NON-MANUFACTURING

Life Insurance

Mrs. Muriel Sherman, Statistical Department,
Life Insurance Association of America

Mr. Buckingham, Insurance Section,
The New York Board of Trade

Mr. Frankfurt,
Insurance Local #30,
United Office & Professional Workers of America

Insurance Other Than Life

Mr. Robert Gilmore, Legal Department,
Association of Casualty and Surety Companies

Mr. H. A. Coumbe, Exec. Ass't. to the General
Manager,
National Board of Fire Underwriters

Banking

Mr. Francis Florin, Executive Ass't.,
New York State Department of Banking

Mr. G. Garvy, Research Department,
The Federal Reserve Board

Advertising

Mr. Gamble, President,
American Association of Advertising Agencies

The Legitimate Theater

Mr. Elting, Business Manager,
Actors Equity

Mr. James F. Riley, Exec. Secretary,
The League of N. Y. Theaters

Radio and Television

Mr. W. A. Clark, Admin. Ass't.,
Engineering Department, NBC

Management

Mr. Fernald, Mr. Chaikin, Market Research
Analysts,
The N. Y. Herald Tribune

Warehousing

Mr. Gerlach, President
Mr. Harold Fates, Vice President,
Manhattan Storage & Warehouse Co.

GENERAL

Organizations

Mr. Henry Astwood,
Commerce and Industry Association

Mr. Ivon Boxell, Mr. H. A. Swain,
Chamber of Commerce, Borough of Brooklyn

Mr. John J. O'Conner, Appraiser,
Equitable Life Assurance Society

Industrial Location

Mr. Charles Wood,
Lockwood Green Engineers, Inc.

Mr. Leonard C. Yaseen,
Fantus Factory Locating Service

Realtors

Mr. Maurice Spear, President,
Spear and Company, Inc.

Number of Persons Interviewed

Manufacturing 19

Non-manufacturing 15

General 7

TOTAL Number of Interviews
Held 41